

PULP & PAPER

IN THIS ISSUE

**A Promise—This Industry Hereafter Will Be
Heard on Foreign Loans** see page 44

**Exclusive and Complete Picture Story on NCC's
New Valdosta Mill** see page 62

**Digester Corrosion Debate—Other Sides—Pro
and Con—are Heard** see page 86

THE PRODUCTION AND MANAGEMENT MAGAZINE OF THE PULP AND PAPER INDUSTRY



ONE CONTINUOUS STRUCTURE 850 feet long houses National
Container Corp.'s new, modern kraft pulp mill at Valdosta, Ga.

APRIL 1954



the difference is
the money you
pocket with
Cyanamid's LIQUID ALUM

Specify Cyanamid's Liquid Alum and pocket money from these savings...

Savings in Cost

based on solids content, *liquid* alum can be delivered at a lower price than dry — because of fewer steps in its processing

Savings in Handling

no manual unloading, hauling, storing — the pumps and the pipes do the work
no intra-plant distribution labor, no mess,
no dust, no clean-ups

Savings through Efficiency

you meter Cyanamid's Liquid Alum directly and accurately into the beater or hydropulper — no guesswork, no risk of spillage

Send for Cyanamid's free booklet, *Alum—Commercial Aluminum Sulfate*, containing valuable information on alum and a diagram of a typical liquid alum system.

THE LARGEST VARIETY OF PAPER CHEMICALS, to serve every industry need, is offered by Cyanamid, and is backed by the services of technical experts with years of practical mill experience.

**Recent Mill Developments
in Cyanamid Paper Chemicals...**

INCREASED WET-STRENGTH EFFICIENCY is credited to Sodium Phospho Aluminate when used in conjunction with PAREZ® Resin 607. One mill experience in the Great Lakes area shows that wet strength is increased as much as 10% when 0.2-0.4% of SPA is added to the beater.

* * *

UNUSUALLY GOOD SIZING RESULTS are reported by a Pennsylvania mill using CYFOR® Dry Dark fortified size. After switching to CYFOR, this mill obtained a 17% reduction in water absorption as measured by the Cobb test.


* * *

CONSIDERABLE SAVING IN A LARGE-SCALE COATING operation is credited to the replacement of stearate by ALWAX® Size 204-A. The Wisconsin mill noted that the increase in viscosity was less pronounced than with stearate, and that the smoothness of the coated paper was just as good as that obtained by using 6% stearate. These results were secured at considerably less expense.

* * *

IMPROVED PICK TEST ON OFFSET PAPERS was achieved by the use of 0.25% of PAREZ Resin 607 added at the sand trap. This was made standard procedure at this midwest mill, which also reports no broke reclamation problem due to the small amount of resin involved.

*Trade-mark



AMERICAN Cyanamid COMPANY
PAPER CHEMICALS DEPARTMENT
30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

Sales Offices: Boston • Charlotte • Chicago • Cleveland • Kalamazoo • Los Angeles • Mobile • New York • Philadelphia • Seattle
In Canada: North American Cyanamid Limited, Toronto and Montreal

Rice Barton PRESS ROLLS

Designed for...

- SAFETY AT HIGH SPEED
- HIGH LOADINGS
- TRUE BALANCE
- LONG SERVICE



*Precision built
for today's requirements
of High Speed
and Accuracy!*



RB4-54

RICE BARTON CORPORATION

Worcester, Massachusetts

Paper Machine Builders Since 1837

West Coast Distributor: Ray Smythe . . 501 Park Building • Portland, Oregon

from pulp to paper

BLACK-CLAWSON PRECISION PAYS OFF

Zero Plus Sixty . . . it is axiomatic that new and rebuilt Black-Clawson paper machines produce salable paper and board within an hour after start-up . . . Zero Plus Sixty.

How come? Papermaking know-how, experienced engineering, research, plus precision shop practices always make quick start-ups possible. "Zero Plus Sixty"—well worth consideration when your investment is involved.

0 + 60



THE BLACK-CLAWSON COMPANY
WASHINGTON, D.C. • HICKLETOWN, OHIO • PATON, NEW YORK

PULP & PAPER

Production and Management
Magazine of the Industry

April 1954
Vol. 28—No. 4

IN THIS ISSUE

REPORTS FROM PAPER WEEK—1954

Future Relations with Government	44
Optimistic View of Years Ahead	46
How to Attack Safety Problem	47
100 Personal Stories	50
Electrical Engineering Committee	96
Review of Tappi Program	98
Complete Picture Story on New Mechanized, Inter-locked NCC Mill at Valdosta, Ga.	62
Debate on Kraft Digester Corrosion Problems	86
Some New Data on Kraft Digesters	90
Equipment and Supply Co. News	112

PULPWOOD SECTION

How to Cut Costs and Speed Forest Growth	78
Some New Portable Barkers Discussed	79

PERSONALS

South	10	Canada	10
Northeast	14, 18	Middle West	18, 26
Pacific Coast	26, 30		

ALBERT W. WILSON Editor
WM. J. KREBS, C. L. SHAW Associate Editors
LOUIS H. BLACKBURN, MAURICE R. CASTAGNE, STUART F. LIETE, A. W. PONSFORD, WARD C. WILLIAMS Regional Editors
RALPH R. DAVID Advertising Sales Manager
M. F. BOSWORTH, KEN A. JOHNSON Advertising Sales Assts.

A MILLER FREEMAN PUBLICATION

MILLER FREEMAN President
LAWRENCE K. SMITH Vice President
WILLIAM B. FREEMAN Vice President
MILLER FREEMAN JR. Secy.-Treasurer



Publication Office

Emmett Street, Bristol, Connecticut

Office of Editor

1791 Howard St., Chicago 26, Ill. ROgers Park 4-3420

Advertising and Production Office

370 Lexington Ave., New York 17, N.Y. MUrray Hill 3-9294

71 Columbia St., Seattle 4, Wash. (MA 1626); 906 Royal Bank Bldg., Vancouver, B.C. (MA 7287); 3518 Dante St., New Orleans 18, La. (AM 2762); 534 SW 3rd Ave., Portland 4, Ore. (BEacon 6348); 121 2nd St., San Francisco 5, Cal. (GA 1-3887); 815 Witmer St., Los Angeles 17, Cal. (DUNKirk 9-1112).

SUBSCRIPTION RATES (for 12 monthly issues and WORLD REVIEW NUMBER, each year): United States, Canada, Mexico and other Pan American Union nations—1 yr., \$3.00; 2 yrs., \$5.00. Others—1 yr., \$4.00; 2 yrs., \$7.00. CHANGE OF ADDRESS: Please send subscription orders and changes of address to Subscription Dept., PULP & PAPER, 121 2nd St., San Francisco 5, Calif. Include both old and new addresses, and zone number.

ADVERTISING: All copy plates, instructions and insertion orders should be sent to New York office.

PULP & PAPER is published monthly, except August when publication is semi-monthly, at Bristol, Conn., by Miller Freeman Publications, Inc.

COPYRIGHT, 1954, by Miller Freeman Publications, Inc. Contents may not be reproduced without permission. Entered as second class matter, Dec. 4, 1951, at Post Office, Bristol, Conn., under Act of March 3, 1879. Postmaster: Please send Notice 3579 to PULP & PAPER, 121 Second St., San Francisco 5, Calif.



PULP & PAPER circulates all over the world—throughout the United States, Canada, Mexico, Alaska, Hawaii, the Philippines, Australia and New Zealand, Argentina, Brazil, Chile, Colombia, Cuba, Ecuador, Guatemala, Uruguay, Venezuela, England, Ireland, Scotland, Sweden, Norway, Finland, France, Germany, Austria, Belgium, Italy, Netherlands, Portugal, Spain, Switzerland, Yugoslavia, India, Pakistan, Israel, Morocco, Egypt, Turkey, South Africa, China, Hong Kong, Japan, Formosa.

PULP & PAPER — April 1954

COMMENT

Why Not a National Pulp and Paper Week?

What we call Paper Week draws a few thousand people to New York who are virtually lost in the mid-Manhattan vortex, and it gets a few sticks of publicity in the New York papers, usually back pages.

A National Cotton Week in May will produce more than a million lines of retail advertising. A big push is being made this year in cotton, a revived, improved, powerful competitor to woodpulp rayon. Why shouldn't there be a National Pulp and Paper Week, too?

More Alumni Might Organize

With Maine, MIT, Syracuse and Western Michigan alumni holding their own luncheons during Paper Week, when will the University of Wisconsin and University of Washington alumni in pulp and paper start theirs? Graduates of those two schools are found in mills all over the continent.

It would be a convenience, if alumni groups all met the same day, to minimize conflicts with other Paper Week events.

Why Not See Other Paper Centers?

Paper Week is always held in New York because there are few other places where upwards of 4,000 persons can be housed, fed and entertained so easily.

But the management group alone might consider the value of holding periodic meetings in other regions of the country where this industry is big and is doing things worth seeing—meeting, for instance, in Savannah or Jacksonville, maybe St. Simons Island in Georgia, in Seattle or Portland, Ore., possibly Kalamazoo or Grand Rapids. Management already has an annual executives conference in Appleton.

Trouble with most paper mill centers, the hotel facilities are inadequate—and so poor in some places that they reflect discredit to the dominant industry.

A Chance to Publicize This Industry On a Postage Stamp

Perhaps if leaders and organizations in this industry would write to the Postmaster General in Washington, D.C., the United States pulp and paper industry might receive some valuable publicity in a new series of stamps to be issued.

There have been reports that these stamps will honor leading American industries. The new series will replace the Presidential series of 1938.

By some calculations, pulp and paper is the fifth largest industry in the U.S.; in others, the 6th largest. In any case, if U.S. postage stamps are going to honor great industries, this one should be included. Let the P. G. know what you think!

Paper Wins Markets for Keeps

Once that paper or paperboard wins a new market, it keeps it. Paper and paperboard have substituted for many materials—but there is no substitute for paper or paperboard, except in a few cases where the product was also made from woodpulp.

SELF-DOCTORING TOPRESS ROLLS

rubber covered
by
GRIFFITH
OF PORTLAND

THE MOST ADVANCED DEVELOPMENT IN RESILIENT ROLL COVERINGS
SINCE THE INTRODUCTION OF RUBBER COVERED SUCTION ROLLS

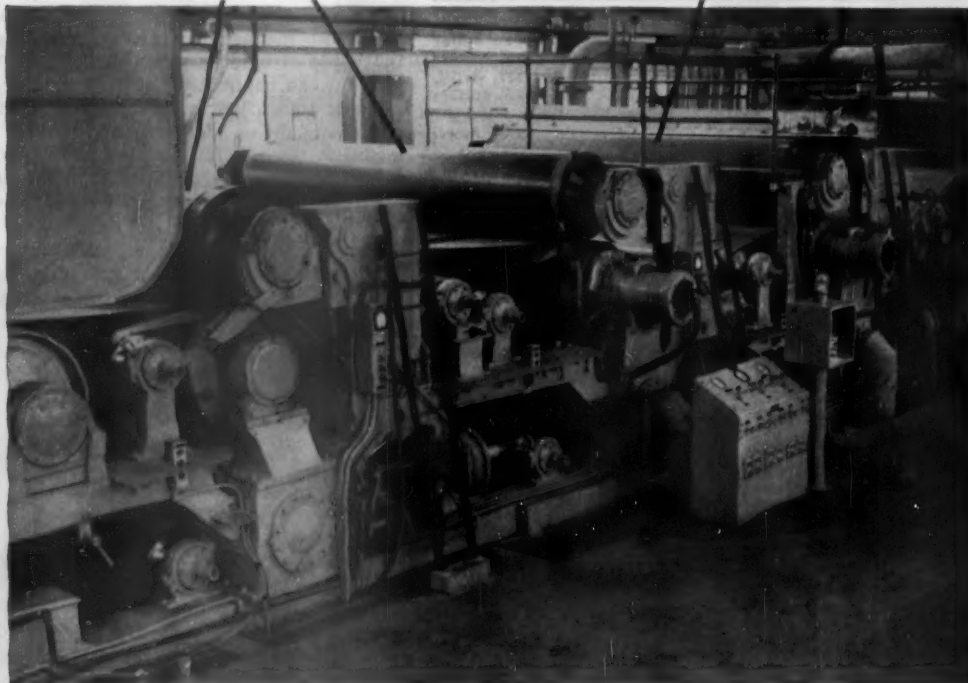
The Self-Doctoring Topress rolls covered by GRIFFITH will not pick the sheet because a special improved rubber cover compound is used. Breaks in the sheet contacting the Topress Rolls are eliminated. Doctor Blades may be entirely removed from the machine—or their use discontinued.

With the installation of GRIFFITH Self-Doctoring Topress Rolls on an open top press, you gain the advantage of resilient rolls of the hardness required for best operation. This gives better water removal at higher speeds, plus much longer felt life.

Three GRIFFITH covered S.D.T. Rolls are used on Weyerhaeuser Timber Company's 400-ton-per-day machine at Springfield, Oregon, running at 1,200 ft. per minute.

SECOND & THIRD PRESSES—GRIFFITH covered Self-Doctoring Topress Rolls with Doctor Blades and Holders permanently removed from machine.

FIRST PRESS—GRIFFITH covered Self-Doctoring Topress Roll with Doctor Blade off the roll.



WRITE, WIRE OR TELEPHONE FOR AN ESTIMATE ON YOUR JOB

Griffith
RUBBER MILLS

2439 N. W. 22nd AVENUE
PHONE: BEACON 7126
PORTLAND, OREGON

WESTERN INDUSTRIAL RUBBER SPECIALISTS SINCE 1911

April 1954 — PULP & PAPER

NO USE TRYING TO FIND THE

NEEDLE



...TILL YOU FIRST FIND THE

HAYSTACK!

If you have actually *tried* Nopco KF* or KFS sheet formation aids in your plant, this message is not for you. But it strikes us that too many conscientious superintendents spend a lot of valuable energy hunting individual cures for a host of "small" troubles—while all the time the remedy that would do away with many of these is right out in plain view, conspicuous as a haystack in the barnyard.

Instead of beating your brains out worrying about stock floating in the chest... foam troubles on your screens... in your headbox... not to mention serious imperfections in your sheet formation—why not order a trial quantity of Nopco KF or KFS? Paper men who *are* using these quick-acting products tell us they minimize foam all along the line, and by doing so eliminate a lot of headaches, speed production, and yet turn out a much finer finished product.

So the remedy for many of your "little" troubles is as near as your telephone.

Whether Nopco KF, KFS, or another of the KF Series is your best bet, the Nopco specialists will be glad to tell you. And these same specialists will work closely with you, in your own plant if you wish, to make sure you get the best possible results. Write for new revised edition of "Nopco KF Series Dispersing Agents for Improving Sheet Formation."

NOPCO 
CHEMICAL COMPANY
Harrison, New Jersey

Boston • Chicago • Cedartown, Ga. • Richmond, Calif. • London, Ont.

*REG. U.S. PAT. OFF.

LOOK TO NOPCO ALSO AS YOUR SOURCE OF SUPPLY FOR:

Foam Killers • Sulfated Oils • Wax Emulsions and Emulsifiers
Emulsified Resins • Coating Compounds • Rewetting Agents
Insoluble Metallic Soap Dispersions • Sheet Formation Aids
Plasticizers • High Free Resin Sizes • Pitch Dispersants.

Freeman Praised as 'Father' of Treaties

Capt. Freeman, praised in Congress as "father" of treaties and builder of "leading publishing house."



HIGH PRAISE was voiced on the floor of the U. S. House of Representatives Feb. 8 for Miller Freeman, president of Miller Freeman Publications, which includes PULP & PAPER.

Hon. Thor C. Tollefson, M.C., said: "Activation in Washington this month of the International North Pacific Fisheries Commission crowns the career of Miller Freeman and his half-century campaign for conservation of world fishery resources through international agreements applying scientific research and intelligent management."

"The treaty, under which U. S., Canada and Japan undertake development of fisheries on a basis of sustained yield, is the third treaty to come into effect largely through the vision, faith and efforts of Miller Freeman."

The first, a 1924 pact on halibut, he said, has been a "model for 30 years." The second, credited with saving sockeye salmon from extinction, was "shepherded into being by Miller Freeman, and promises to yield food and wealth to Canadians and Americans forever."

The conference for the new treaty was suggested by Capt. Freeman and he served as its chairman, with owners, unions, workers and scientists working together to save their livelihood.

Recalls Personal Career

Of Capt. Freeman's personal career, Rep. Tollefson said:

"He is founder and builder of one of the leading industrial publishing houses of this country. His earliest memory was of traveling through Montana with a knockdown print shop in two covered wagons, also sheltering the Freeman family."

"His father was a Confederate soldier from Virginia and later published a unique newspaper—the *Frontier Index*—which moved with the frontier, west and west. Miller Freeman was born in Ogden, Utah, 79 years ago. In Seattle in 1903, he founded *Pacific Fisherman*, first of his numerous industrial journals, most of them devoted to natural

resource industries. Some deal primarily with the Pacific region.

"Others, like PULP & PAPER (founded in 1927) *The Lumberman*, *Mining World* and *The Log*, are national in scope. All are international in reputation and respect."

He recalled Capt. Freeman's service as a naval captain and training station commandant in World War I and various enterprises he championed.

"Miller Freeman has made his mark and served his country well in widely varied ways."

David Named Adv. Sales Mgr. for PULP & PAPER; Castagne Joins Staff

Ralph R. David has been appointed advertising sales manager for PULP & PAPER. Since 1951, Mr. David has been associate editor of the magazine and director of eastern advertising sales. His headquarters will remain in New York City.

Maurice R. Castagne has taken over editorial duties for PULP & PAPER on the eastern seaboard, covering Middle Atlantic and North Atlantic states. He will also be headquartered in New York. William J. Krebs, associate editor with offices in New Orleans, is responsible for Southern editorial coverage.

Mr. David joined Miller Freeman Publications in 1942, serving in editorial and advertising capacities in San Francisco, Los Angeles and New York. During this period, he was instrumental in founding the Produce Prepackaging Association, representing one of the largest consumers of pulp and paper. He is a graduate of the University of Oregon and for several years was associated with Fibreboard Products Inc. in California.

He is married and has three sons. He is a member of Pi Kappa Alpha social fraternity, Sigma Delta Chi social fraternity, and the San Francisco Press and Union League Club and the Overseas Press Club of America.

Mr. Castagne has been with Fraser Paper, Ltd., which, with the affiliated Fraser Companies Ltd., of Canada, is one of the leading pulp and paper manufacturers on the continent. He did writing and sales administration work in the Fraser New York offices for five years and spent six months at the Edmunston, N. B., general mill offices and in Fraser mills in that area, devel-



RALPH R. DAVID (left), appointed Advertising Sales Mgr. for PULP & PAPER, and MAURICE R. CASTAGNE (right), who has taken over duties as Regional Editor for PULP & PAPER on the eastern seaboard. They will both make headquarters in New York City at PULP & PAPER's office at 370 Lexington Ave.

oping a community and public relations program.

He attended St. Joseph's College in Maryland and took a New York City pulp and paper course. He was born in Georgetown, Brit. Guiana, Dec. 19, 1920, moving to Brooklyn when he was two and has lived there since. He is married and has two sons.

Speculate on Cellophane Plant for West Coast?

ECUSTA PAPER CORP., Olin Industries subsidiary, has taken an option on 400 acres at Red Bluff, in northern California, and speculation was high that this will be site of a new cellophane plant. But a late release reveals Olin plans to build new cellophane plant at Kern, Ind.

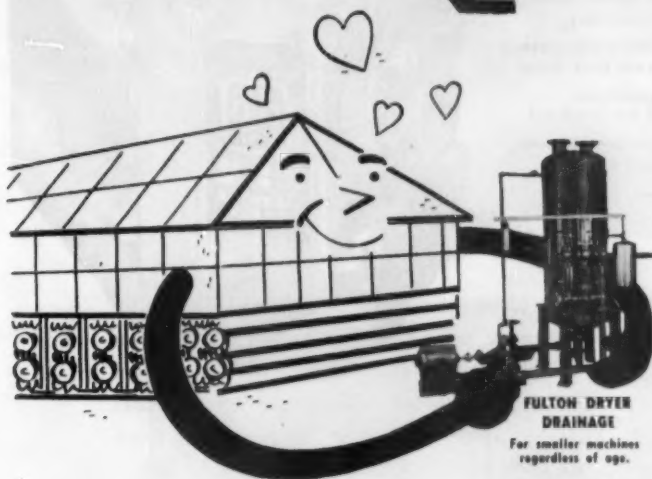
Ever since the war there has been much discussion that some cellophane producer would build in California or Oregon, near sources of wood fiber raw material and the big western market. All present cellophane plants in U.S. are in the east. Waste wood of northern California is raw material of one of first big kraft pulp mills, in that state.

However, at Ecusta operations in North Carolina, Olin makes cigaret, airmail and Bible paper from flax straw. California is one of main sources of flax straw. Rice straw is also plentiful near Red Bluff.

St. Regis Will Build in Virginia

St. Regis Paper Co. has selected a 21-acre property in Franklin, Va., for a new multiwall bag plant, replacing one presently leased from Camp Mfg. Co. in Franklin. Camp requires the leased plant for its own expanded operations.

THE Rebirth OF OLD NO. 1



Old No. 1 is up in years, slow and sluggish. Quality is off. Tonnage is off. Profit margins are too close for comfort.

Machine too old? Not necessarily. Too small? Not necessarily. Chances are about 10 to 1 that the bulk of the trouble lurks in the dryer section.

Faulty drainage makes for slow drying and lower tonnages. Faulty drainage causes uneven drying, cockling, curling. And a low output of less marketable grades makes for higher costs, stiffer competition and less in the bank.

What to do? There is just one way out—just one. Snap up the machine production with a Fulton Dryer Drainage System.

Fulton Dryer Drainage removes condensate and air continuously, resulting in the highest possible dryer surface temperatures consistent with the steam pressures used.

Fulton Dryer Drainage provides the most effective dryer curve from lead-on dryer clear on through to the last dry and dryer.

Faster drying. Better drying. Less steam. Better profits. Those are the benefits. Close to 900 Fulton Dryer Drainage systems in service. Cost? Not enough to stop the mill that investigates.

THE MIDWEST-FULTON MACHINE CO.

DAYTON, OHIO

Floatless Liquid Level Control... for

- condensate level in digester heaters and black liquor evaporators
- brown stock washer filtrate tank level
- precipitator wet bottom level
- other pressurized-vessel processes

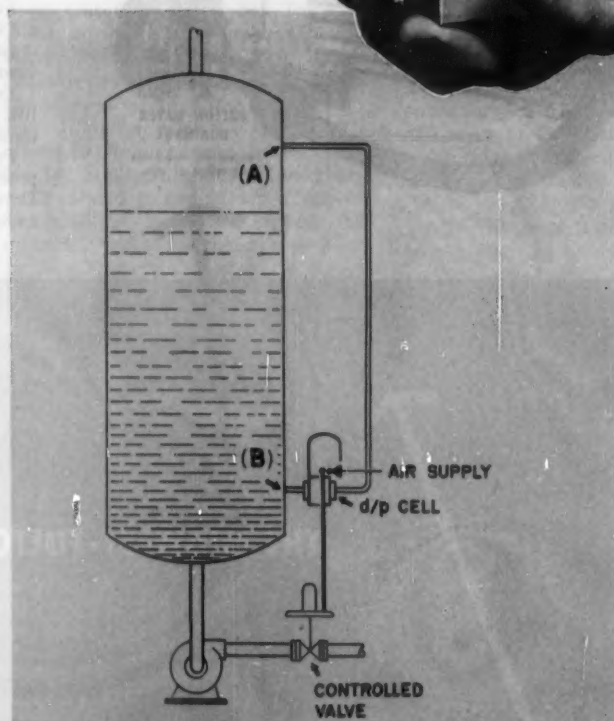


RIGHT FROM THE START the simple design and operation of the Foxboro d/p Cell will save you time and money on many liquid level control applications. This unique differential pressure transmitter eliminates maintenance problems of float-type controllers. And it operates the valve pneumatically, without additional control devices.

The Foxboro d/p Cell is light in weight, compact, Type 316 Stainless Steel construction. Ranges from 25" to 800". Initially low in cost, the d/p Cell installs externally with simple piping connections.

For the logical solution to your liquid level control problems, investigate the Foxboro d/p Cell. Write for Engineering Data Sheet 000-12.

The d/p Cell measures differences in heads between maximum level (A) and minimum level (B) — transmits air pressure directly to control valve, in proportion to level change. Prevents pump cavitation and tank overflow.



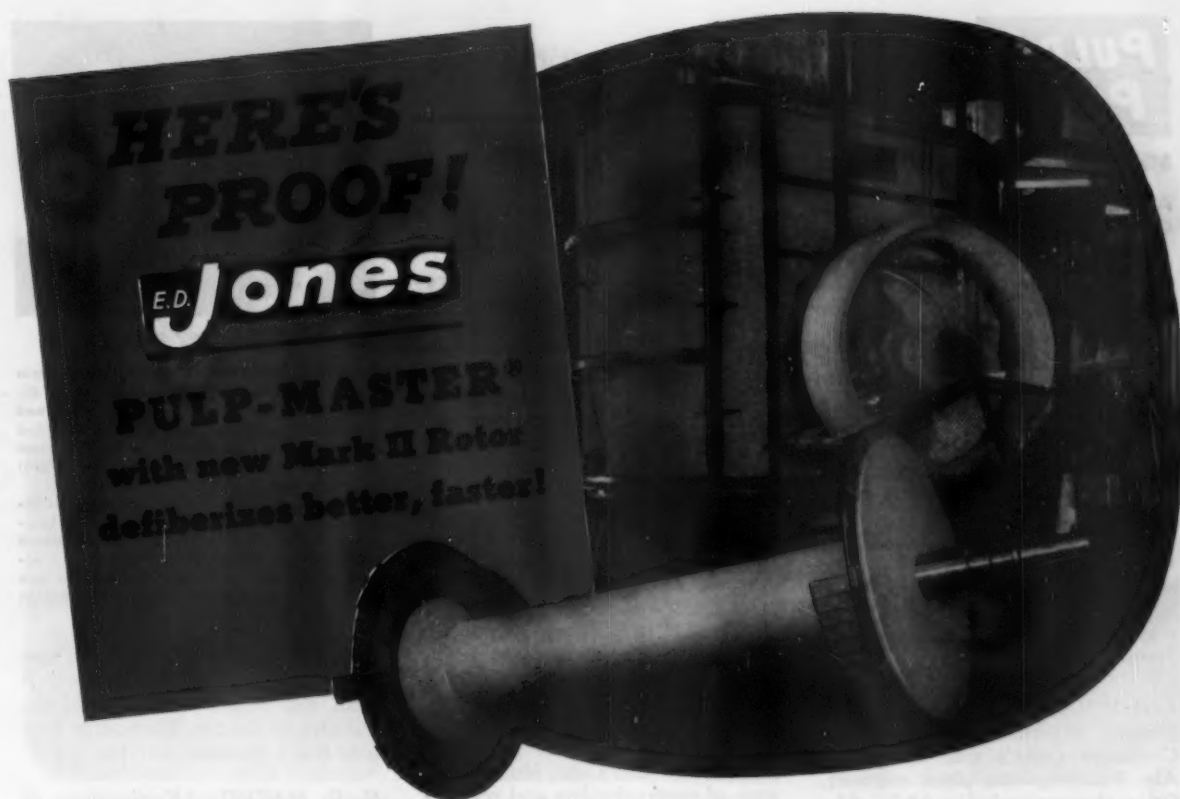
THE FOXBORO COMPANY, 994 NEPONSET AVENUE, FOXBORO, MASSACHUSETTS, U. S. A.

FOXBORO

REG U S PAT OFF

d/p cell

FACTORIES IN THE UNITED STATES, CANADA, AND ENGLAND



"The results are as good as any we could wish for," says the production manager of a mill making sulphite and sulphate bonds. "We've reduced the horsepower hours for pulping bond broke from 187 to 60."

The slides tell the story. Taken from an actual run, under mill conditions, they graphi-

cally demonstrate the superiority of the Pulp-Master with the new Mark II rotor over conventional pulping methods.

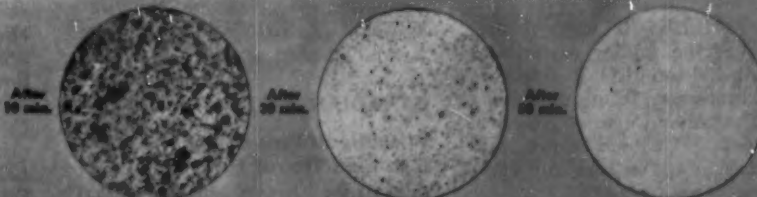
The Pulp-Master is equally effective on baled pulp, broke, bagasse, waste paper or other material. Ask your Jones representative — or write direct for details.



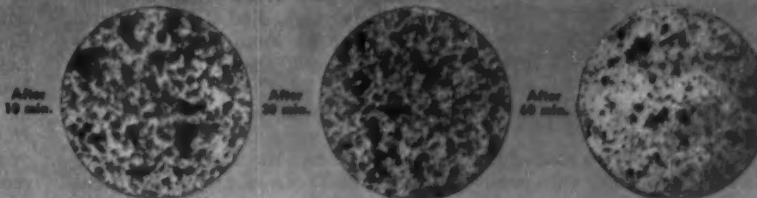
E. D. JONES & SONS COMPANY
Pittsfield, Mass.

BUILDERS OF QUALITY STOCK PREPARATION MACHINERY

Actual unretouched "shadowgraph" photos of papers made of stock taken from run of hard-pressed unbleached pulp in PULP-MASTER with Mark II Rotor, at intervals shown.



Actual unretouched "shadowgraph" photos of papers made under same conditions from same stock while being defiberized by conventional pulping method, at intervals shown.



SOUTHERN NEWS

Another Bowater Man; Changes for Rayonier

J. K. KIRKPATRICK has been named assistant groundwood superintendent at Bowaters Southern Newsprint Corp., mill at Calhoun, Tenn. Previously he was groundwood superintendent at Champion Paper & Fibre Co.'s Pasadena, Texas, mill.

DONALD E. LAWSON has been named assistant resident manager at Rayonier Corp.'s Fernandina, Fla., mill. He was resident engineer at the company's Port Angeles division. **G. E. SCOFIELD**, formerly assistant resident Mgr., Fernandina, was transferred to the new mill at Jesup, Ga., as assistant resident mgr.

L. R. HOLLINGER has been named general superintendent of Stone Container Corp.'s mill at Mobile, Ala. Formerly was plant engineer. Other changes include: **ALEX ALLEN** from assistant superintendent to mill supt; **E. R. ROSE** from master mechanic to maintenance supt.

FLEET COOPER RATLIFF, Louisiana-born bleaching and screening specialist for many years at Gaylord Container, and his wife, the former Olivia Eagles, greeted a new daughter, Olive Ann, this past fall. It was their third—a boy Fleet Jr. is 12, another girl, Edith Ruth, is 9.

J. R. BEMIS, president of Ozan Lumber Co., which has for years flirted with the idea of getting into pulp, too, is now president of the National Lumber Mfrs. Assn.

W. G. KARRAN is now general manager of the folding carton and boxboard division of O. B. Andrews Co., Chattanooga, Tenn., a subsidiary of Container Corp. of America. He succeeded Donald H. Brewer who moved to Chicago as company vice-president.

LEON WRIGHT has become senior engineer in the machine design section, engineering department, Sonoco Products Co., Hartsville, S.C. He is a graduate from Clemson College.

JOHN BOON, one of two sons of the late **HENRY G. BOON**, vice-president of Kimberly-Clark until his

sudden death Nov. 10, is learning the paper game at the Coosa River mill. His brother, **RICHARD**, is a U. of Wisconsin student.

GEORGE A. HERMANN, who recently retired as sales manager of Hermann Claflin Refiner Co., is planning to settle down in a new home at Daytona Beach, Fla., and he anticipates continuing activity in this industry. He and his family were to move there from Lancaster, O.

W. H. SWANSON, vice pres. of Kimberly-Clark, resident of Neenah, Wis., was elected director of Coosa River Newsprint Co., Coosa Pines, Ala., succeeding late **HENRY BOON**.

F. E. SCHILLER, who wrote the exclusive article on supercalendering published in March issue of **PULP & PAPER**, page 110, is no longer with Oxford Paper Co. in Maine, having accepted a position with West Virginia P & P Co., Luke, Md., mill as supt. of supercalenders and rewinders. He lives at 510 Maryland Ave., Westernport, Md.

CHARLES P. KIRCHEN has been appointed Southern sales mgr., Buckman Laboratories, Inc., producers of slime control agents and other industry chemicals, Memphis. He previously has been with Buckman in the South since 1947, and before that with H & W, Northwest Paper, and American Cyanamid.

ALEXANDER CALDER, exec. v.p. of Union Bag, is a new trustee of the Bank of N.Y.

OLIVER H. STIEBER, St. Louis is new general traffic mgr. for Gaylord Container, succeeding the late **ERNEST D. GRINNELL**.

CANADIAN NOTES

Whitehead Dies at 88; B.C. Men Travel Far

CHARLES ROSS WHITEHEAD, familiar figure at Canadian meetings for many years, died at his Montreal home, age 88. Founder of Wayagmack Pulp & Paper Co. in 1911, later part of Consolidated Paper Corp., he was vice president and honorary v. p. of Consolidated many years. He had a business career of 72 years in the Montreal vicinity. He was president of a cot-



IN NEW INDUSTRY POSTS

ROBERT C. BARIENDROCK (left), moved from Kingsport, Tenn. to Chillicothe, O., to be Director of Wood Procurement for all Mead Corp. mills. Born in Cleveland, he attended Ohio State and graduated in forestry from U. of Michigan. Served overseas as Naval officer in war.

FREDERICK P. KING (right), appointed Controller of Champion-International Co., Lawrence, Mass. Born in Kansas, he graduated from Bentley School of Accounting and attended Northeastern U. and Harvard. He was an officer and chief accountant of a Boston steamship firm.

ton firm. For ten years he was vice chairman of the Canadian P & P Assn. and regarded as dean of the industry in Quebec. His widow, four sons and a daughter survive.

H. R. MACMILLAN, chairman of the board, MacMillan & Bloedel, Vancouver, B.C., is honorary colonel of the Seaforth Highlanders Regiment in British Columbia. Formerly in command of the Seaforths in Vancouver is **B. M. HOFFMEISTER**, president of MacMillan & Bloedel, who commanded all Canadian troops in Italy during World War II.

HERBERT J. MCKENZIE, manager of Export Sales Co., which sells British Columbia newsprint in the markets of the world, was off on one of his trips in March and for Herb a "trip" means up to 25,000 miles or more. This time he was renewing contacts in Japan, Hongkong and Singapore. **HARRY PYM**, sales manager of Pacific Mills, is another newsprint man who gets around. He recently returned from South Africa.

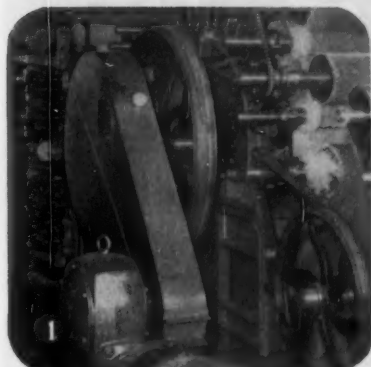
C. J. WARWICK FOX became vice president and gen. mgr. of Great Lakes Paper Co., at Fort William, Ont., last year, largely at the behest of his brother, **PERCY M. FOX**, who is president of St. Lawrence Corp., a big stockholder in Great Lakes. A few days ago Mr. Warwick became a president, too. In addition, he continues as general manager. **HON. EARLE ROWE**, for many years president, continues as director.

Continued on page 14

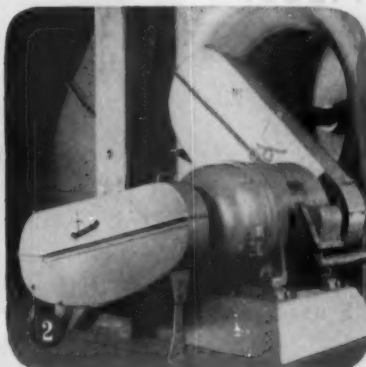
If you need a drive for jobs like these--

YOU'RE MONEY AHEAD

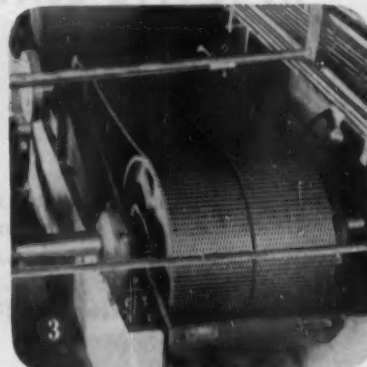
with LINK-BELT Silent Chain



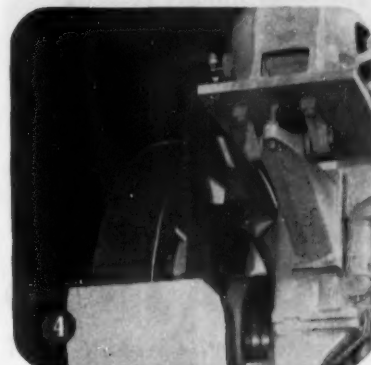
1 ADVERSE OPERATING CONDITIONS. Humidity, heat, cold do not lower Link-Belt Silent Chain's better-than-98% efficiency.



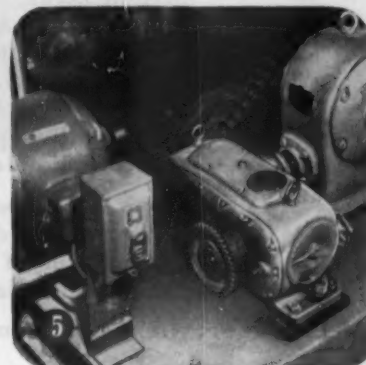
2 UNFAILING SAFETY. Dependability assures continued production. On above tunnel ventilators, Link-Belt drives protect human life.



3 LARGE OR SMALL HP. A versatile line, Link-Belt Silent Chain drives are available from fractional to thousands of horsepower.



4 LARGE RATIOS. Link-Belt Silent Chain operates efficiently on extremely short centers at ratios as high as 10-to-1.



5 LIMITED SPACE. Easy to assemble in close quarters, Link-Belt Silent Chain permits built-in drives, compact housings.



6 HIGH SPEED. After 13 years on this newspaper press at speeds up to 4700 fpm, Silent Chain is still efficient.

Here's why Link-Belt Silent Chain Drives offer you more per dollar spent:

- Lower cost—often lower in first cost, always lower in ultimate cost.
- Longer life—trouble-free performance for 25 or 30 years is common.
- No dismantling machine or removing sheaves for repairs.
- Better than 98% efficiency.
- Maintained ratio assures full productive capacity.
- Slipless action assures a better product.
- Easy to install.
- Safe to employees—operates in oil-retaining casing.

For all the facts, see your Link-Belt distributor or factory branch store, or write for new Book 2425.

13,440



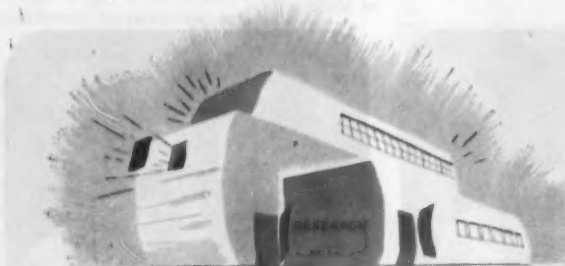
SILVERSTREAK SILENT CHAIN DRIVES

LINK-BELT COMPANY: Executive Offices, 307 N. Michigan Ave., Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office: New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World.

HOW MUCH NICKEL IS THERE IN A FIVE-CENT PIECE?



An interesting question, for sure. But not the kind of question we're concerned with. Due to the special nature of our work . . . CORN PRODUCTS RESEARCH . . . only those inquiries involving CORN'S uses can be placed on our agenda.



If you have a question like "How can we best apply this dextrine to our needs?" or "What can be done with starch to cut costs here or here?" or any other inquiry relating to the adaption of products from corn to your manufacturing process, contact us! All research and laboratory facilities of the Anheuser-Busch Corn Products Research Section will be placed at the disposal of your particular problem, without charge.

Why? . . . because Anheuser-Busch, Inc., is vitally concerned with the future research and development of corn derivatives and their application to daily life.

Address all inquiries to:



ANHEUSER-BUSCH, INC.
CORN PRODUCTS DEPARTMENT
ST. LOUIS, MO.

CORN STARCHES • GUMS • DEXTRINES

Now

Commercial 65% Yield News Sulphite is Here!

... made possible
by **CURLATORS**



CURLATOR

The Curlator is the first and only machine to produce a first-class news sulphite pulp at 65 per cent yield in full scale commercial operation.

This "semi-sulphite" replaces normal low yield sulphite pulp pound for pound in the news-print furnish.



*T.M. Reg.—Curlator Corporation, Rochester, N. Y.

in continuous MILL OPERATION

65%

YIELD OF NO. 1 SULPHITE
FOR NEWSPRINT

UP TO

30%

SAVING IN WOOD ALONE
PLUS UP TO 30% SAVING
IN SULPHUR, LIMESTONE
AND STEAM

43%

INCREASE IN
DIGESTER CAPACITY

WRITE for News Bulletin on Commercial
65% yield News Sulphite.

NORTHEAST NOTES

**Promotions by Brown Co.;
Scott Honors Rescuers**

LAURENCE F. WHITEMORE, President of Brown Co., Berlin, N.H. announces three promotions. **DOWNING P. BROWN** is now vice president, administration; **NEWTON L. NOURSE** replaces him as vice president in charge of sales and **ROBERT**

W. ANDREWS, works manager, is now also vice president. Mr. Brown's long association with the company began in 1908 and he has served in various capacities in woods and sales departments. Mr. Nourse joined Brown in 1920 and created its technical sales department in 1925. Mr. Andrews came to Brown in 1952, was chief engineer and executive vice president of Minnesota and Ontario Paper Co.



A PAIR OF E. D. JONES "ACES"

JACK R. AYERS (left), soon to move himself and family from Pittsfield, Mass., to Appleton, Wis., to cut down traveling in covering Lake States for E. D. Jones & Sons. **THURSTON L. YOCUM** (right), Jones Sales Engineer in Quebec and part of Middle West, both on the staff of Sales Chief **CHARLES H. VICKERY**. Mr. Yocum formerly was with Crown Z in Camas.

PHILIP H. GLATFELTER III, at 37 became youngest president in the 49 year history of the Manufacturers' Association of York, Pa. Mr. Glatfelter is executive vice president and general manager of the P. H. Glatfelter Co. He graduated from Brown University in 1939.

ALBERT BRODEUR, service engineer with Hollingsworth & Whitney, Waterville, Me., is now with his father-in-law in private business in Greenwich, Conn. Mr. Brodeur was formerly with Fraser at Madawaska mill and later in their New York office.

HENRY ELDER and **JOHN L. JONES** of the Chester, Pa. mill of Scott Paper were each awarded five shares of common stock for rescuing a fellow employe from drowning in Delaware River.

GEORGE W. SISSON, who was president of the APPA, when SAPI was founded, died at Madrid, N.Y., Feb. 7, at the age of 92. He was president of Racquette River Paper Co. many years, and chairman emeritus when he died.

JOHN B. OSGOOD has joined the industrial relations department at Champion-International Co., Lawrence, Mass. Graduate of Boston U. he was formerly editor of a Lawrence daily newspaper.

WILBUR M. McFEELY, director of industrial relations is a new v. p. of Riegel Paper Corp. In 1953 was elected to the board of directors. He is also a vice president and director of Riegel Textile Corp. and director of industrial relations for that company as well.

Continued on page 18

Drying Paper Better

EFFICIENT Paper Drying calls for felts that breathe freely, inhaling greedily, exhaling easily. They must themselves dry readily.

Barrell Tour Boss L. D. felts do exactly that. The face ply of close construction has maximum moisture-removal contacts. Their porous back ply exhales vaporized water freely and uniformly, enabling the felt itself to dry sufficiently to maintain its *free-breathing*.

Cotton felts do not glaze. No particles come loose to mar the paper. No marks are left on the web. Throughout the life of a Barrell felt the drying is uniform. This enables you to get even-sided finish and at a lower steam cost. You can make better paper with better drying.

BARRELL TWO-PLY COTTON DRYER FELTS



Siamese • Tour Boss
L. D. Constructions
By Lawrence Duck Co.
Lawrence, Massachusetts

**BAR-L
DRYER
FELTS**

WILLIAM L. BARRELL CO.
52 Chauncy St., Boston, Massachusetts



6 B&W RECOVERY UNITS SERVE 3 MILLS OF

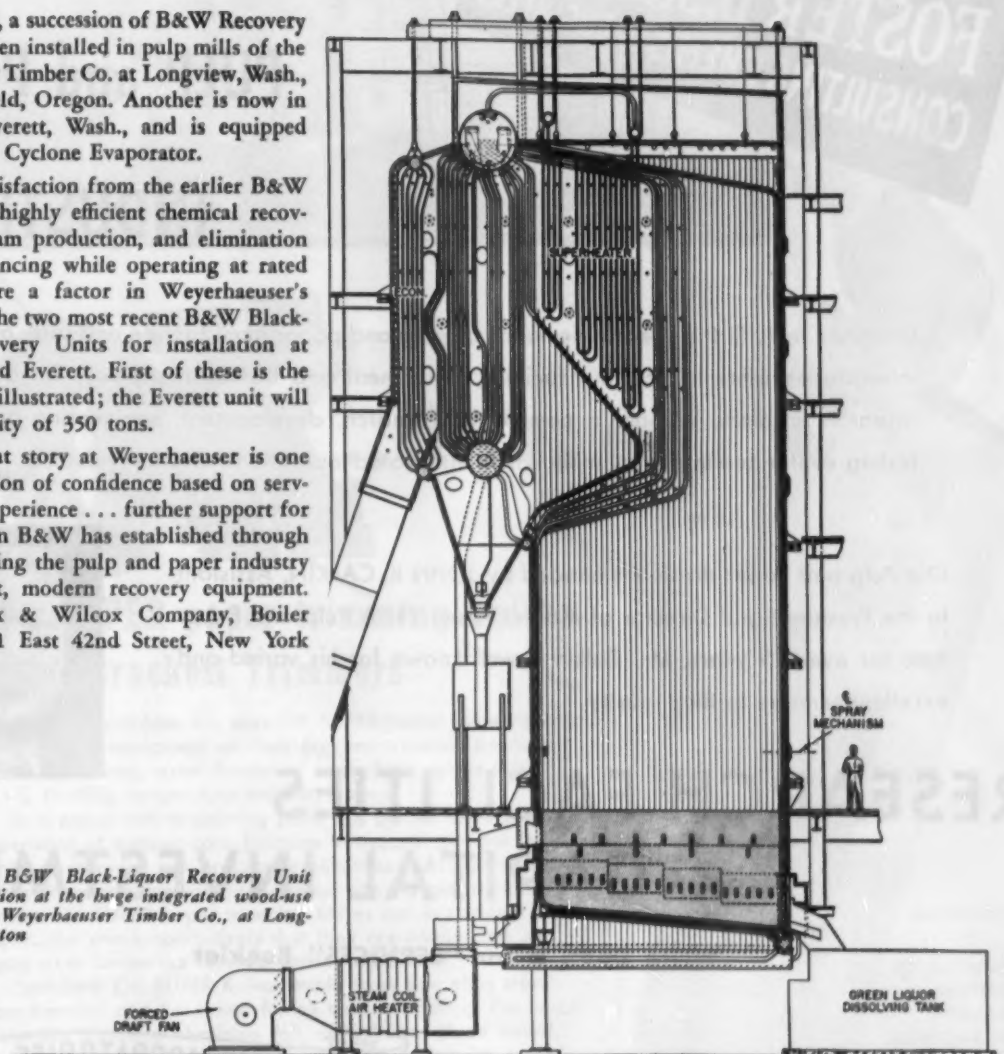
PULP DIVISION **WEYERHAEUSER**

Since 1945, a succession of B&W Recovery Units have been installed in pulp mills of the Weyerhaeuser Timber Co. at Longview, Wash., and Springfield, Oregon. Another is now in service at Everett, Wash., and is equipped with a B&W Cyclone Evaporator.

Service satisfaction from the earlier B&W Units—their highly efficient chemical recovery, high steam production, and elimination of routine lancing while operating at rated capacity—were a factor in Weyerhaeuser's selection of the two most recent B&W Black-Liquor Recovery Units for installation at Longview and Everett. First of these is the 300-ton unit illustrated; the Everett unit will have a capacity of 350 tons.

This repeat story at Weyerhaeuser is one more indication of confidence based on service-proved experience . . . further support for the reputation B&W has established through years of serving the pulp and paper industry with efficient, modern recovery equipment. The Babcock & Wilcox Company, Boiler Division, 161 East 42nd Street, New York 17, N. Y.

New 300-ton B&W Black-Liquor Recovery Unit now in operation at the huge integrated wood-use center of the Weyerhaeuser Timber Co., at Longview, Washington



BABCOCK & WILCOX

P-783



A MILLION - \$
RESEARCH
LABORATORY
for the
PULP and PAPER
INDUSTRY

Designed to fulfil the specific demands of pulp and paper manufacture and sale, our laboratories offer to you the facilities, equipment and trained manpower for any research problem. We are a commercial research, development, engineering and testing center serving small mills, large integrated operations and individuals.

Our Pulp and Paper division is headed by JOHN B. CALKIN, Assistant to the President and Director of Market Research. A Pulp and Paper man for over 25 years, Mr. Calkin is well known for his varied and excellent services to the Industry.



RESEARCH FACILITIES
without **CAPITAL INVESTMENT**

Write Dept. R for "SERVICES" Booklet





Photo courtesy of The Dexter Folder Co., Pearl River, N. Y.

it's **OK**...let'er go!

**with OK SUPER paper trimming knives
on Dexter Brackett Trimmers**

The Dexter Folder Co. uses OK SUPER paper trimming knives as standard equipment on their Brackett trimmers because their ultra sharp, extra hardened super keen edges last 25% to 40% longer than ordinary knives.

In a paper mill or printing plant this means continuous operation at a lower cost, because frequent stoppages for knife sharpening are practically eliminated. Actual reports from America's largest paper mills, printing plants, etc., where OK SUPER paper trimming knives are in constant operation prove conclusively that they are unequalled for long wear under the severest service conditions.

Standard OK SUPER Knives made from fine alloy steel are beveled and hardened for all types of cutting. For tough jobs like trimming aluminum foil, cellophane, glued board, rubber, plywood, etc., they are available in special bevels, and hardnesses.

Write Dept. F for comprehensive bulletin.

THE OHIO KNIFE CO.

CINCINNATI 23, OHIO

Manufacturers
of
**OK SLITTER KNIVES
CHIPPERS
TRIMMERS
REVOLVING CUTTERS**

GO WITH OHIO GREEN

NORTHEAST NOTES

J. W. McSWINEY, assistant secretary-treasurer, Brunswick Pulp and Paper Co., Brunswick, Ga., was sent to Harvard for a special course in top-level management problems, from Feb. 24 to May 21. Temporary changes during absence: **HOHN STILES**, special assistant to Mr. McSwiney, assumes responsibility of company auditor. **HERMAN SCOTT**,

doing purchasing, takes on additional outside contractor contacts and **BRADEN ROBINSON**, plant accountant, takes over work relating to mill operations, formerly handled by Mr. Stiles. **HENRY WALDEN**, woods accountant, now handles similar responsibilities in wood procurement and timber lands.

ALEX SMALLEY, vice president, labor relations, has taken on broad-



IN NEWS OF LAKE STATES

A. L. (AL) SHERWOOD (left), is now a Member of Board of Directors of Sutherland Paper Co., Kalamazoo. He has been Vice Pres. in charge of Research and Engineering since 1947. News of election to Board was not widely known until published in company annual report.

FRANK H. COLDWELL (right), named Manager of Power Dept., Nekoosa-Edwards Paper Co., Port Edwards, Wis., with outside and mill power divisions combined under one head. He had been Mill Power Mgr., now assumes charge of Nepco Lake, three hydro-electric plants and company telephone system which E. P. Gleason, now retired, headed.

ened responsibilities at St. Regis Jacksonville mill. As assistant to Mr. Adams, Mr. Smalley will direct all industrial relations and administrative activities in the manufacturing division of the company.

ALFRED L. HARTRIDGE and **STUART F. KOSTERS** have been elected v. p.'s of Stone & Webster Engineering Corp. **THOMAS W. BARRY** is appointed assistant treasurer. Mr. Hartridge joined S & W in 1931 and has served as personnel manager and continues as treasurer. Mr. Kusters joined in 1930 after service with the army and he is appraisal manager also.

MIDDLE WEST NEWS

New Weyerhaeuser Man; Salesman Slugged

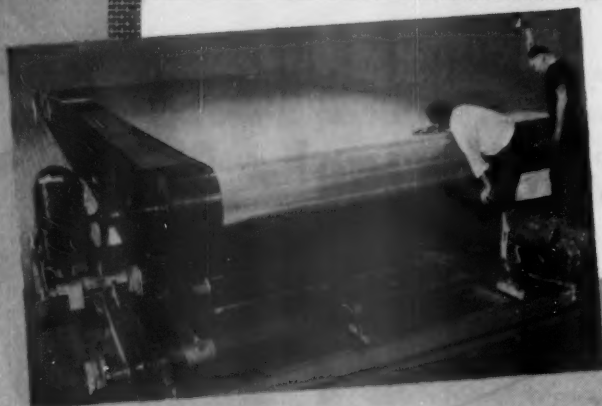
JOHN SHETHAR, native son of N. Y. City, 1950 grad of Yale and a Marine war veteran, is newest member of Weyerhaeuser Pulp Division sales staff for Midwest in Chicago offices. He was in Midwest sales for Union Bag & Paper Corp. He lives in the Sherman Apts., Evanston, Ill., and is single.

JOHN VANITEN, one of few 50 year veterans of Charmin Paper Mills (formerly Hoberg), in Green Bay, has retired at 65. For ten years he was converting supt., holding clerical positions more recently.

WALTER J. CASSIDY has been appointed product development mgr. of sales div., Sorg Paper Co.

Continued on page 22

Two of the Men Behind Eastwood Wires



FINAL EXAM

Here James Baney and Clarence Reed are making a final, inch-by-inch examination of a large fourdrinier wire. Though this is a final check, it is only one of many given it at every stage of its manufacture, from the casting of the alloys in our own foundry to the stretching table inspection shown above. Because the Eastwood-Nealley plant is a completely integrated operation, every wire we ship has undergone thorough and continual analysis, control and testing from the raw metals to your finished fourdrinier wire ready for quality paper production. We are proud to say they are truly ours — "from ingots to fourdrinier wire".

EASTWOOD-NEALLEY CORPORATION
Belleville, N. J.



The Emerson Magnetic Trap introduces a new idea for separating junk material from paper pulp and other liquid flow lines—particularly where conditions of high stock velocity and consistency exist. Combining the principle of the trap with that of magnetic separation, the removal of both magnetic and non-magnetic material is accomplished. You no longer need to fear the danger of tramp metal damaging expensive machinery or equipment.

Engineered for Efficiency — Stock is directed to the plates at right angles. As the square-inch area of the plates is over four times that of the pipe, stock remains over the plates more than four times longer — well within the flux pattern of the magnets — with no restriction to normal pipe line flow. A rush of stock from inlet to outlet is prevented by a baffle. Stock leaves the plates vertically — slowly — relieved of all junk material.

Greater Magnetic Power — Emerson Heavy Duty Magnetic Plates — carrying a 10-year pulling power guarantee — were specially designed for this unit. Magnets are cast

of the new super — with Hyflux Alnico V with 22% more magnetic strength — completely enclosed in stainless steel non-magnetic housing.

Easy to Clean — One complete turn of the nuts frees the gibs and the hinged doors are free to open. Plates can be cleaned inside the housing or removed.

Easy to Install — Emerson Magnetic Traps are equipped with Standard Class 125 C.I. pipe flanges for connection on 8", 10", 12" or 16" pipe lines.

Send for Catalog 1044-M for information on:

Emerson Magnetic Traps — for difficult conditions of separation.

Emerson Magnetic Separators — for moderate conditions of separation — stocked in 6", 8", 10", 12" and 14" pipe sizes.

Emerson Magnetic Plates — for separate installations in troughs, pipes, chutes, flow boxes, head boxes, etc.



The Emerson Manufacturing Co.

Division of John W. BOLTON & Sons, Inc.

Lawrence, Massachusetts, U.S.A.

INCONEL
PREHEATER
TUBES
AT CHAMPION

Last Longer...
Stay Clean Longer!

Trial leads to 100% installation

Started Something.

The Inconel tubes in this digester liquor preheater were installed almost five years ago. In view of their outstanding performance, the CHAMPION PAPER & FIBRE COMPANY has since put Inconel tubing into all 14 remaining preheaters at the Canton, N. C., mill.

Nineteen forty-nine was a busy year at the Canton, N. C., mill of the Champion Paper & Fibre Company.

With rigid production schedules to meet, they'd been running digester liquor preheaters full tilt.

The mill kept up with schedules all right — but the preheaters showed the strain.

You can understand why. All 15 preheaters were going twenty-four hours a day, seven days a week. Inside the tubes — sulfate cooking liquor. Outside — pressurized steam at 354° F.

Ordinary tubes lasted just about twelve months. By then they were so badly corroded they had to be scrapped.

In June, 1949, Champion installed a trial set of Inconel® tubes in one preheater...

Today — almost five years later — those Inconel tubes are still in use.

Long life is not their only advantage, either, as Champion has discovered. The Inconel tubes also stay clean twice as long as the old tubes did. Not only does cleaning cost half as much, but Champion runs 17 more tons of pulp during the time the second washing used to take!

In short, the trial was a huge success. So Champion followed through — they retubed their 14 remaining preheaters with Inconel.

Keep Inconel in mind if you're having trouble with a metal used for any corrosive job in pulp, paper or board mill. And write us for a copy of *Practical Solutions for Metal Problems in Pulp and Paper Mills*. The revised edition of this helpful illustrated booklet is available now. You'll find it a valuable source of information.

THE INTERNATIONAL NICKEL COMPANY, Inc.
67 Wall Street New York 5, N. Y.

Inco Nickel Alloys



MONEL® • "R"® MONEL • "K"® MONEL • "KR"® MONEL
"S"® MONEL • INCONEL® • INCONEL "X"®
INCONEL "W"® • INCOLOY® • NIMONIC® ALLOYS
NICKEL • LOW CARBON NICKEL • DURANICKEL®

PUGET PULP—the whitest, cleanest, bleached sulphite pulp that we can make is produced particularly for the market. To assure converting mills of top quality, Puget management is always testing new processes, always alert to improved methods, always ready to install new designs in equipment. Gear your operations to **PUGET PULP**.



PUGET SOUND

PULP AND TIMBER COMPANY
BELLINGHAM • WASHINGTON

MIDDLE WEST NOTES

WILLIAM L. GILLESPIE, new Chicago sales manager for Hooker succeeding **CHARLES CAIN**, now in plastics sales, has been with Hooker since 1931 after graduating from Alfred U. He has been in sales since 1950, mostly in Midwest. New sales representative in Chicago Midwest office, at 1 No. LaSalle, is **VICTOR M. MORGAN**, graduate of U. of Mass. with master's in 1950 from U. of New Hampshire.

L. C. LANE, Purdue graduate, has established headquarters at West Lafayette, Ind., as new Midwest sales manager for Carver Pump Co., Muscatine, Ia. He lives at 1806 Garden St.

BOB GRESCH, a Nekoosa-Edwards salesman, was slugged and robbed while walking through a park to his San Antonio, Tex., hotel. An operation on his eye, cut by his glasses, was necessary. His assailant was caught and Bob got his watch back.



PROMOTED BY SPENCER CHEM. AS PART OF EXPANSION PLANS

W. HOWARD MILLINGTON JR. (left) named North Central District Sales Mgr. of Industrial Chemicals for Spencer Chemical Co., at 38 South Dearborn, Chicago. **ROBERT H. MULLETT** (right), named Industrial Sales Representative, will report to Mr. Millington. Moves are part of expansion looking toward Spencer's entry in polyethylene field.

Mr. Millington went with Spencer in 1942, before graduating from Washington U., St. Louis, and doing graduate work at Northwestern U., returning to Spencer as Market Analyst and later Salesman. Mr. Mullett graduated from U. of Mississippi in 1949, joined Spencer in 1950 and recently has been in general sales office in Kansas City.

E. P. SURPRISON, who has worked in nearly every department of Nekoosa-Edwards Paper Co., is new employment director of the Wisconsin mills. He attended Northwestern U. and was an Army Engineers war-time officer. **ERNEST BARRYMAN** has been named safety director and **RUSSELL J. CRETE** training director. **VIRGINIA ARMSTRONG** is Nepco's new testing administrator.

FRANK LIBBY, veteran superintendent and manufacturing executive at Kalamazoo Vegetable Parchment Co., has completed 35 years with the Michigan mill.

KONRAD TUCHSCHERER has succeeded the late **E. A. PAGE** as staff safety supervisor for entire Kimberly-Clark Corp., headquarters in Neenah. He was head operating personnel man at Neenah mill and with K-C since 1941. He is a graduate of U. of Wisconsin and Lawrence College.

A. B. WIBERG, for 26 years superintendent of Gilbert Paper Co., Neenah, died Feb. 14 after three weeks illness. Born in Sweden, he was chemist in several West Coast mills. Two of his five sons are in West Coast mills, Edgar at Eugene, Ore., Roy at Longview, Wash. His widow; other sons, Curt, in Seattle, Maurice and William, Neenah, and a daughter, Mrs. John Plowright in Menasha, and 6 grandchildren survive.

Continued on page 26

you're not depending
when you use a
BRAMMER
recording
consistency
control

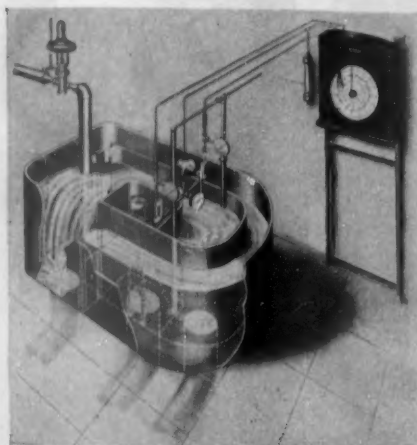
Of course, no mill operator consciously leaves his plant operation to Fate. But Fate is tempted where the element of chance in pulp and paper processing is not being constantly minimized.

The ever-rising market standards for quality products at competitive prices demand accurate control of stock consistency in the mill process.

For this reason more and more mills throughout the world are depending on the **BRAMMER** for proper regulation of pulp stock in varied applications.

The **BRAMMER** is guaranteed to regulate consistency to $\pm 1/10$ th of 1 percent. It also controls stock automatically over a wide consistency range and maintains an accurate, daily 24-hour chart on stock consistencies.

Numerous other advantages are described in Bulletin B2 which we will be glad to supply on request.



Manufactured and Sold in Canada by
THE ALEXANDER FLECK LIMITED, OTTAWA, CANADA.



PANDIA INC.

122 EAST 42nd STREET • NEW YORK 17, N. Y.

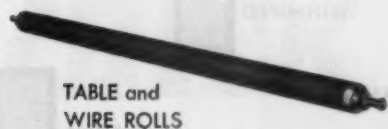


TABLE and
WIRE ROLLS



PRESS ROLLS



FELT ROLLS



COUCH and
LUMPBREAKER ROLLS



SUCTION ROLLS

ONE SOURCE

for every type of
RUBBER COVERED ROLL
used in paper making

From the smallest table roll to the largest press roll, every roll in a paper machine is extremely important; for just like the weakest link in the chain, roll failure at any point results in costly down time and broke.

With an eye to dependable operation and fewer interruptions in production, paper makers come to Stowe-Woodward not only for their critical press rolls, but also for the many other paper making rolls that are critical only when they fail. Depend on Stowe-Woodward... the one best source for every type of rubber covered roll used in paper making.

Rubber Rolls with a Reputation



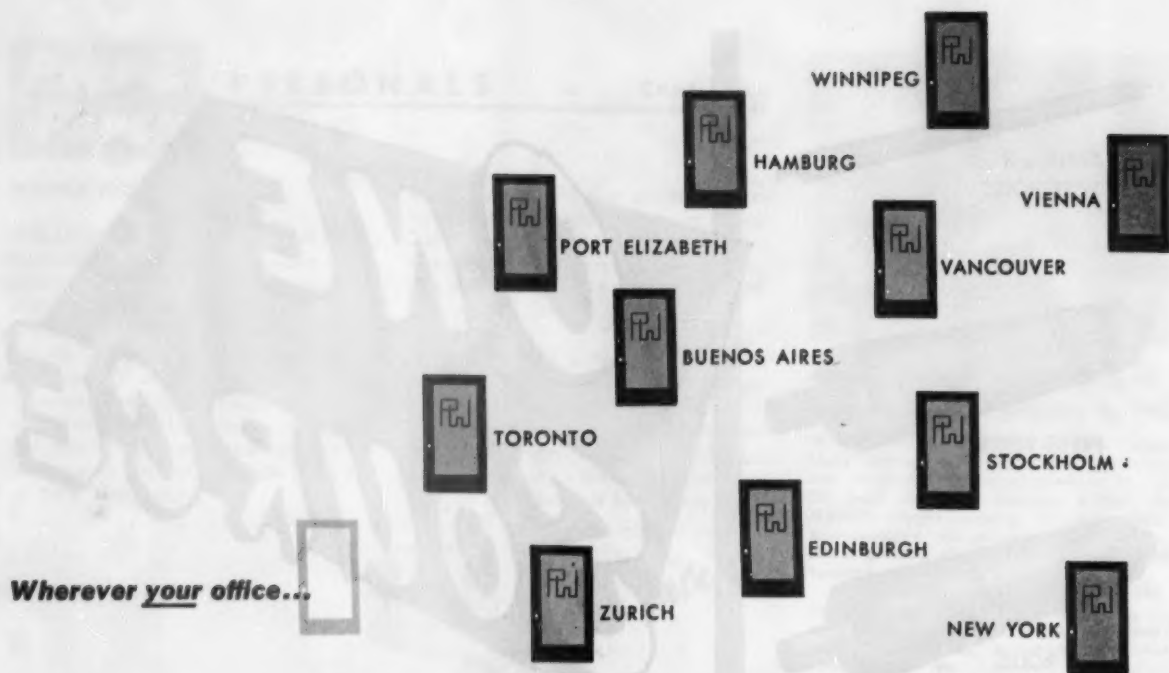
STOWE-WOODWARD, Inc.

Craftsmen in rubber

NEWTON UPPER FALLS 64, MASSACHUSETTS

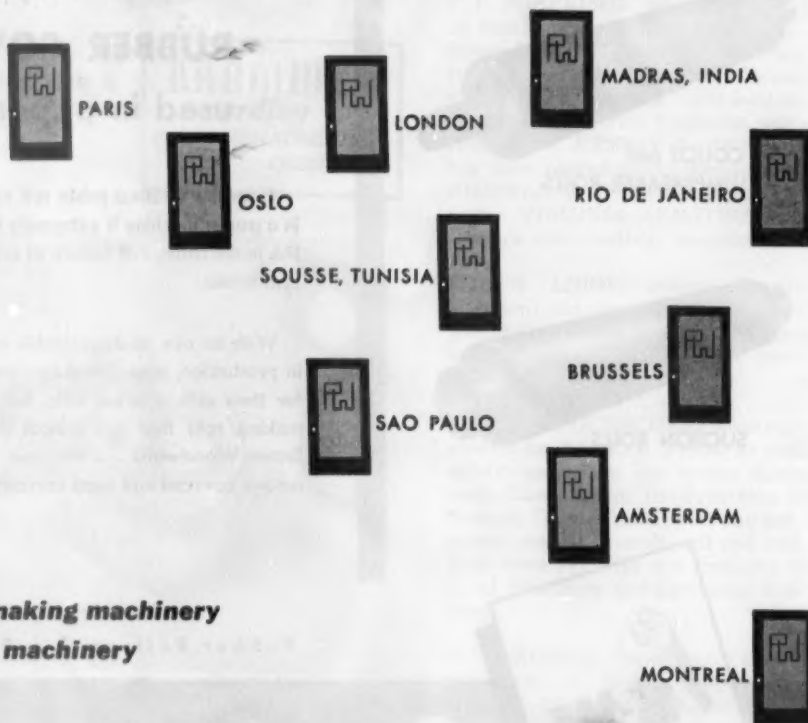
New York office: WOOLWORTH BUILDING, NEW YORK 7, N. Y.

On the West Coast: HUNTINGTON RUBBER MILLS, INC., SEATTLE



Wherever your office...

there's a PARSONS & WHITTEMORE office "next door"



for **pulp**
paper
paper-making machinery
graphic machinery



LYDDON & CO., 35 New Bridge St., London EC4, England

PARSONS & WHITTEMORE, 250 Park Avenue, New York 17, New York

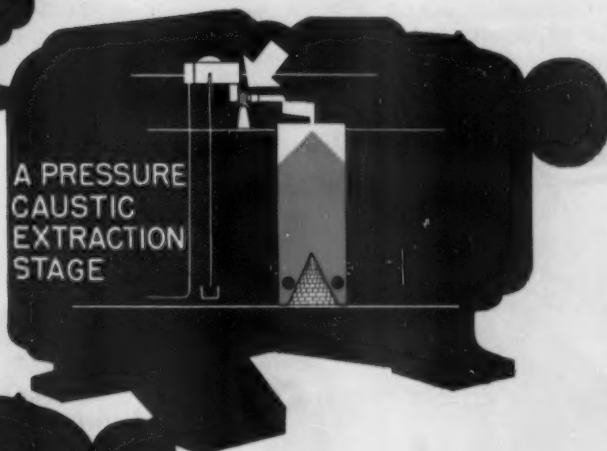
THICK STOCK PUMP

FEEDER TO
HYPOCHLORITE
HIGH DENSITY
STAGE



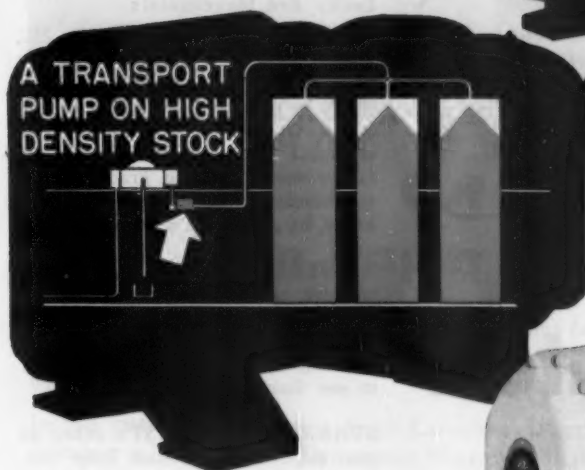
**PUMPING
10%-17% PULP**

A PRESSURE
CAUSTIC
EXTRACTION
STAGE



IMPROVED

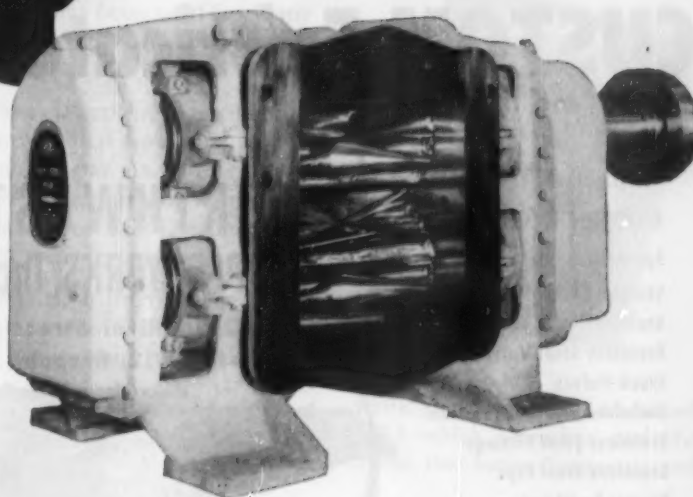
A TRANSPORT
PUMP ON HIGH
DENSITY STOCK



SERIES - 300*
SERIES - 500*

This unit is a positive displacement type pump specifically designed to handle pulps at high densities. The conical profile of its synchronous rotors permits the pumping of stock at densities above 10% A.D.—with lowest horsepower per ton—and no fibre damage. Truly the modern way to handle all types of pulp.

*Tons per day



IMPROVED MACHINERY INC.
NASHUA, NEW HAMPSHIRE

J-35

Sherbrooke Machineries Limited manufacture similar equipment in Canada.

MIDDLE WEST NOTES

BERT COOPER, v. p. of purchasing, Kalamazoo Paper Co., is new chairman of the advisory committee of Western Michigan College's paper technology dept.

MARTIN J. GALBRAITH, tech. director of Sutherland Paper, was elected vice chairman, and **DR. A. H. NADELMAN**, department head, secretary.

EDWARD HAMILTON LOW, veteran mgr. of forest development for M & O Paper Co., died Jan. 1.

JAMES D. TEWEL has been named superintendent of The Manchester Machine Co., Middletown, wholly owned subsidiary of Gardner, according to **JAMES BOYD**, Manchester president. Mr. Tewel headed up manufacturing at a Cincinnati machine works.



HUYCK NAMES DISTRICT MGRS.

FRANK P. KNACK (left), has been promoted to Midwest District Mgr.; **ALAN R. BOYD** (middle) to Mid-Atlantic District Mgr., and **W. D. (DICK) STROUD** (right) to New England District Mgr.—all for F. C. Huyck & Sons, Rensselaer, N. Y., according to Fred Soderberg, Vice Pres. All three were Sales Reps. with aggregate of 87 years with Huyck. They continue in present territories. Mr. Knack lives at Geneva, Ill., graduated from Union College, has covered South as well as Michigan to Colorado. Mr. Boyd lives in Wyndmoor, Pa., graduated from U. of Cincinnati with two degrees, including chem. eng. Mr. Stroud lives in Falmouth Foreside, Me., graduated from McGill, was a mill chemist in Quebec before joining Huyck.

PACIFIC COAST

Sons Now in College; Lucky Are Hazelquists

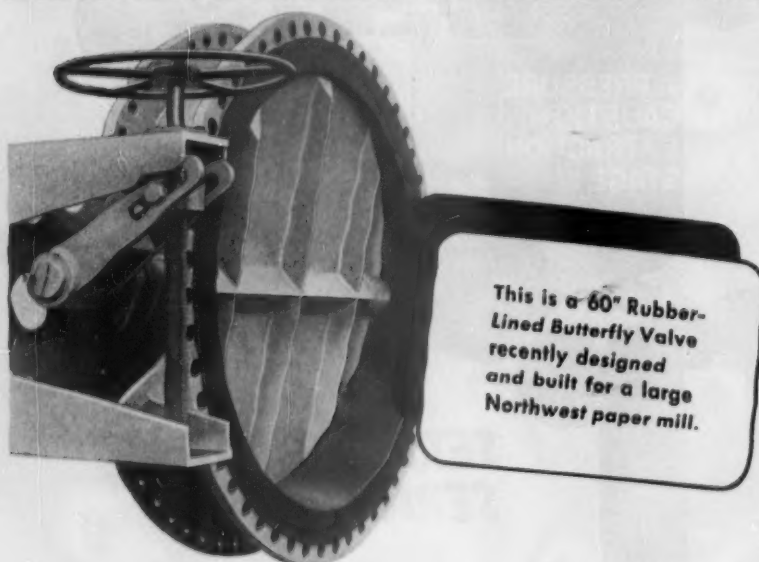
JOHN MARTIN WILCOX JR., whose father of like name is process division manager of Electric Steel Foundry Co., Portland, Ore., is entering Oregon State College as a chemical engineer. He is 18. His father was mech. eng. graduate, but as chemical pulp men of the West know, he picked up a lot of chem. e.

RUSSELL O. VOGNILD, assistant western sales manager for Hooker Electrochemical Co., Tacoma, and wife, Eva, recently made an extensive trip into Mexico and expected to see their first bullfight.

SVARRE HAZELQUIST's debut as gen. supt. of Ketchikan Pulp Co., comes propitiously just when his children are ready for new schools. He and wife Millie will maintain Longview home until June. Oldest son, Al, high school track star, graduates and will enter U. of Washington in fall. Son, Donald, 6, starts school in Ketchikan. A married daughter was planning to make the Hazelquists grandparents.

FRED W. STOLZ, U. of Wisconsin graduate, is new resident engineer of Rayonier mill, Port Angeles, succeeding **DON LAWSON**, who has gone to Fernandina, Fla., as assistant manager. Mr. Stolz joined Rayonier at Hoquiam, Wash., in 1946 and went to Port Angeles as asst. resident engineer in 1952.

Continued on page 30



CUSTOM Fabricators

TRAINED PERSONNEL... MODERN FACILITIES...

Specializing in:

- Stainless Steel Products
- Stainless Steel Tubing
- Stainless Steel Valves
- Stock Valves
- Stainless Steel Fabrication
- Stainless Steel Fittings
- Stainless Steel Pipe
- Copper Smithing
- Lead Linings
- Lead Burning

NORTHWEST COPPER WORKS, Inc.

1303 No. River Street
Portland 12, Oregon



Telephone MURdock 2191

**DYNAMATIC****WATER-COOLED
POWER COUPLINGS**

Cut Broke Time on Paper Making Machines

Dynamatic eddy current rotating equipment has been used for many years by the paper industry for better speed control, uniformity, and increased tonnage.

In the installation above, a large Canadian newsprint manufacturer is using a Model 90W Dynamatic Water Cooled Coupling, driven from a 600 hp motor, to drive a Fourdrinier paper machine at speeds up to 1100 fpm. In addition to accurate speed control with quick response, power factor correction is obtained on this Dynamatic installation through the use of a 1200 rpm synchronous motor.

The excellent speed control and accurate tension provided by Dynamatic equipment on this application has resulted in reduced broke time, outstanding uniformity, higher production, and minimum operating costs.

Dynamatic engineers will welcome an opportunity to discuss the application of eddy current rotating equipment in your plant.



Write for your copy of Bulletin
GB-1 which describes and illus-
trates the basic Dynamatic units.

DYNAMATIC**DIVISION EATON MANUFACTURING COMPANY****KENOSHA, WISCONSIN****General Offices: Cleveland, Ohio**

STONE & WEBSTER ENGINEERING CORPORATION

DESIGN • CONSTRUCTION

REPORTS • APPRAISALS • EXAMINATIONS

CONSULTING ENGINEERING

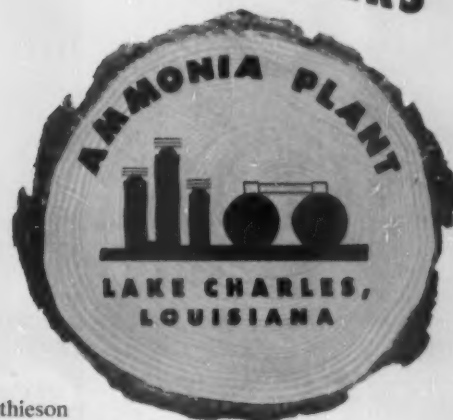


NEW YORK BOSTON CHICAGO HOUSTON PITTSBURGH

SAN FRANCISCO LOS ANGELES

AFFILIATED WITH
STONE & WEBSTER CANADA LIMITED
E. B. BADGER & SONS LIMITED

BLUE CHIPS FOR ANHYDROUS AMMONIA USERS



Pulp and paper manufacturers converting to ammonium bisulphite pulping are looking to Mathieson as a dependable source of supply. They are finding that Mathieson, one of the nation's largest producers of ammonia, is able to maintain reliable delivery schedules from three plants adjacent to major pulp producing areas and other industrial centers.

Of additional advantage to pulp manufacturers is Mathieson's years of technical service experience in the industry. Mathieson's technical service staff is not only familiar with the general problems of the field, but has actively participated in the conversion of many major pulp mills to the ammonium bisulphite process.

Throughout the chemical process industries, Mathieson PRODUCTS-PLUS are of significant value to the consumer. And in pulp manufacture, dependability of supply, PLUS practical technical assistance, PLUS product quality, add up to why you can buy ammonia to better advantage from Mathieson.



MATHIESON CHEMICAL CORPORATION

Mathieson Industrial Chemicals Division
Baltimore 3, Maryland

2327

caustic soda • soda ash • chlorine • sulphur • sulphuric acid • bicarbonate of soda • ammonia • sodium nitrate • nitric acid • hydrazine products
sodium methylate • sodium chlorite • alum • hypochlorite products • dry ice and carbonic gas • ethylene glycols and oxide • methanol

PACIFIC COAST NOTES

BRIAN SHERA of Penn Salt Mfg. Co. of Washington took a course in operation of the Mathieson chlorine dioxide generator at Niagara Falls, N. Y. Penn Salt is representative for the process.

NED SHERA, son of Bri and Merle Shera, was commissioned an ensign in naval amphibious forces out of

San Diego after graduating from Yale, where he earned his Y in football and was elected to Wolfs Head honorary. Brian Jr. (Tim) is a sophomore at Yale in industrial administration, same course his brother took.

CARL FAHLSTROM, asst. resident mgr., Longview Fibre Co., recently visited a daughter in California.

J. D. ZELLERBACH, Crown Z president, is one of few Americans on the board of a Canadian chartered bank. He's on the Canadian Bank of Commerce board.

DR. J. D. REAGH will be associate director in a new research laboratory for Weyerhaeuser Pulp Division to be built in Everett, Wash. **H. W. BIALKOWSKY**, headquartered at Longview, is research director. The Longview research facilities are being expanded to concentrate on paper and board research and will have a staff of 20 to 25.

P. L. CODDINGTON, assistant to the president, Carpenter Steel Co., in charge of the tube division, visited the Pacific Coast with **RAY P. WEYER**, Coast mgr. of the Carpenter tube division.

TRUMAN COLLINS, Portland, Ore., president of several Oregon-Calif. logging companies, has been elected to the Crown Zellerbach board. **HERBERT E. NYLUND** has been elected C-Z treasurer in San Francisco, succeeding **A. L. BENNETT**, resigned because of illness.

HOWARD B. GERBER, whose appointment as Sales Representative in Pacific Northwest, including Brit. Columbia for **E. D. Jones & Sons Co.** of Pittsfield, Mass., was announced in our February issue, and his wife are making their home in Portland Towers, Portland, Ore.

LESLIE R. (ROY) OUTMAN, who started as backtender in 1919 at Certain-Teed Products Corp. paper mill in Richmond, Calif., succeeded **FRANK M. WILLIAMS**, now retired as paper mill supt.

We slipped up recording that **GUS LORENZ**, Crown Z, Camas, is now paper mill supt.—tissue dept. there, and **E. P. BARTHELEMY** is his asst. supt.

W. H. MAXWELL, formerly supervisor of multi-wall bag dept., CZ San Leandro, Cal., transferred to Crown's Camas, plant as bag factory supt. **JAMES BUTTERICK**, shift foreman-napkin dept., Camas, has transferred to San Leandro as asst. converting supt. **CONRAD MORASCH** has been promoted to wood mill supt., Camas, filling vacancy resulting from death of **BERNARD H. MICHELS** Feb. 8.

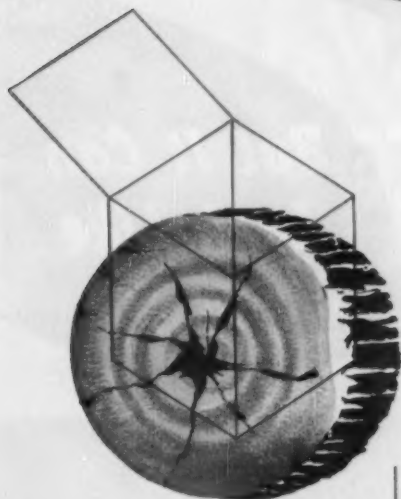
THOMAS F. DRENNAN, insurance auditor, was promoted from CZ San Francisco to assistant office manager at Port Angeles, Wash.

*The year 1954
sees Lindsay
enter upon a
second half
century of
service to the
paper industry.
We pledge our
utmost effort
towards making
that period
more and more
resultful.*

THE LINDSAY WIRE
WEAVING COMPANY
CLEVELAND 10, OHIO

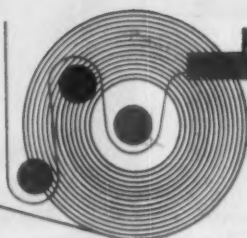
LINDSAY WIRES Since 1903
FOR PAPER MANUFACTURING

THE MARK OF AN
EXTRA DEPENDABLE
PAPER AND
PAPER BOARD MACHINE.

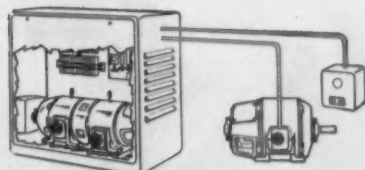
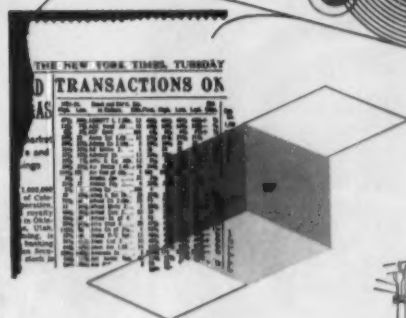


The red "power spot" on paper and paper board machinery means *powered by Electro Dynamic*, the most dependable motors ever available to industry.

For proof of this extra dependability send the coupon below for your copy of "MOTOR SHOWDOWN", a new candid report on comparative results of motor performance tests* conducted in accordance with A.I.E.E. standards.



*Tests certified by J. Arthur Balmford, Professor of Electrical Engineering at a leading Eastern university.



All-electric adjustable-speed drives.

ELECTRO
xtra **DYNAMIC**
dependable motors

1 to 250 hp. AC and DC. Standard or special purpose. N.E.M.A. standards.

ELECTRO DYNAMIC
Division of General Dynamics Corporation
159 Avenue A, Bayonne, New Jersey



Please send me a copy of "MOTOR SHOWDOWN" and the new catalog of Electro Dynamic industrial motors.

PULP & PAPER — April 1954

NAME _____
COMPANY _____
ADDRESS _____



THE UPPER PICTURE was NOT taken in 1900, but recently, in connection with a mill modernization program. As a current specimen of a paper machine back line, it is a "horrible example" . . . probably extreme.

BUT . . . look at YOUR back line and contrast it with the picture at the right . . . a complete Sandy Hill Selective Drive installation on a new machine for which the room and drive were especially designed and built. Here is an excellent example of Sandy Hill planning and Sandy Hill efficiency.

In addition to other advantages, this drive is so designed that belts are moving at full speed in relation to machine operation when the clutch is engaged.

While this is a modern installation, it may be noted that many Sandy Hill Selective Drives are performing adequately after fifteen years of service . . . some still with their original belts.

THE SANDY HILL CREED

1. To keep informed on the problems of paper and pulp making, and
2. To engineer, develop and produce constantly better equipment to meet these problems.





TRUE BLUE

rapid development with good fastness to light
purest shade of blue available

fast bond blue GDx

- clear, bright shade
- minimum two-sidedness
- especially recommended for tints, medium and full shades of blue and green for book, bond and cover papers




FAST BOND BLUE GDx



BRILLIANT PURE
YELLOW 6GS EXTRA CONC.



BRIGHT, BRIGHT
GREENS



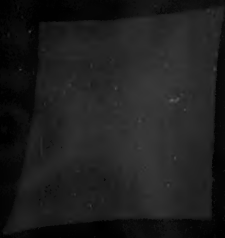
When an acid blue is required,
you can count on FAST BOND BLUE GDx.
Samples and circular available on request.

From Research to Reality



GENERAL DYESTUFF CORPORATION
A SALES DIVISION OF GENERAL ANILINE & FILM CORPORATION
435 HUDSON STREET • NEW YORK 14, NEW YORK

BOSTON • CHARLOTTE • CHATTANOOGA • CHICAGO • NEW YORK • PHILADELPHIA • PORTLAND, ORE. • PROVIDENCE • SAN FRANCISCO





For the PAPER INDUSTRY



Cotton Rolls

Interleaved Rolls

Paper Rolls

Embossing Rolls

Chilled Iron Rolls

Granite Press Rolls

Glassine Supercalenders

Web Supercalenders

Friction Calenders

Embossing Calenders

Laboratory Calenders

Ventilating Fans

Rag Cutters

Paper Dampeners

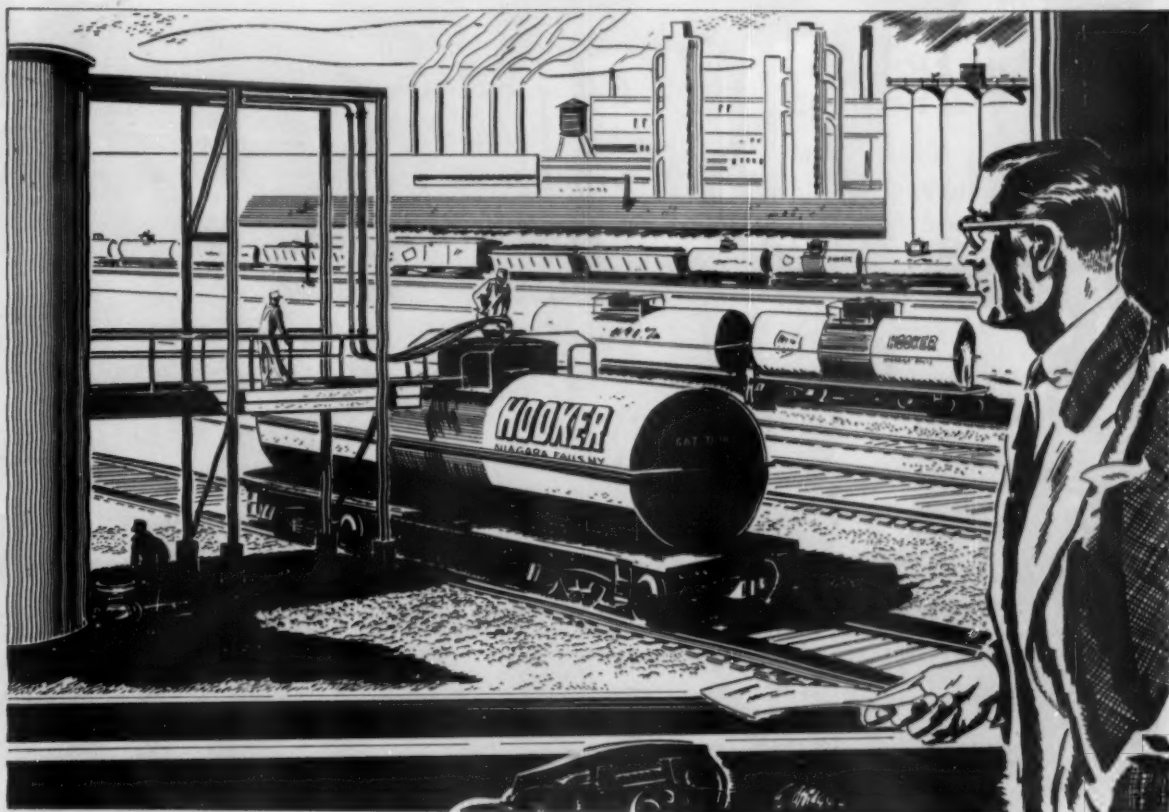
Tensile Testers

Mullen Testers

Hydraulic Power Units



B. F. PERKINS & SON, INC. • HOLYOKE, MASSACHUSETTS



For smoother, better processing— buy the Uniformity Hooker Caustic Soda gives you

Month after month, year after year—you can standardize processing methods, and get consistent results, when you use Hooker Caustic Soda.

You need never adjust your process to meet variations in caustic soda shipments. You can be sure each new shipment closely

matches your current inventory.

Uniformity, from shipment to shipment, is the result of close quality checking at Hooker. More than a score of inspections and analyses safeguard the uniformity of the Hooker caustic you buy.

Do you agree, with leading companies in 30 different indus-

tries, that this is a good reason to *standardize* on Hooker caustic soda?

If you do, a letter or a phone call to the nearest Hooker plant or office will quickly bring you the product data and other facts you need to make your decision.

You can standardize on Hooker Caustic Soda

Forms: Liquid 50% and 73% • Flake • Solid • Special fine flakes

Containers: Tank cars • Tank wagons • Barges • Drums

For fast service, phone: CHICAGO Central 6-1311

LOS ANGELES NEvada 6-3826

NEW YORK MUrray Hill 2-2500

NIAGARA FALLS 6655

TACOMA Broadway 1215



From the Salt of the Earth

HOOKER ELECTROCHEMICAL COMPANY

HOOKER ELECTROCHEMICAL COMPANY

2 Union Street, Niagara Falls, N. Y.

Please send ☐ data sheets on Hooker Caustic Soda; ☐ Bulletin 100 describing Hooker products and services.

Name..... Title.....

Company.....

Address.....

City..... Zone..... State.....



New Masoneilan Moisture Boosts Paper Production

A manufacturer of board says, "Our production is up 7% a day, since installing a Masoneilan Moisture Control System." Another mill making dissolving pulp reports, "A Masoneilan Moisture Control System has helped us increase our tonnage by 10% . . . and cut rejects due to incorrect moisture from 10% to 1%."

And that's not all! Along with many other paper manufacturers of all kinds, these mills are making a *better, more uniform* paper at *lower cost* with the versatile new

Masoneilan Moisture Control System. Here's how and why:

A Masoneilan Moisture Control System maintains an average moisture content across the sheet. Does not rely on "spot" measurements.

It controls moisture content at each of *several* points on the machine — from as high as 50% to as low as 3%.

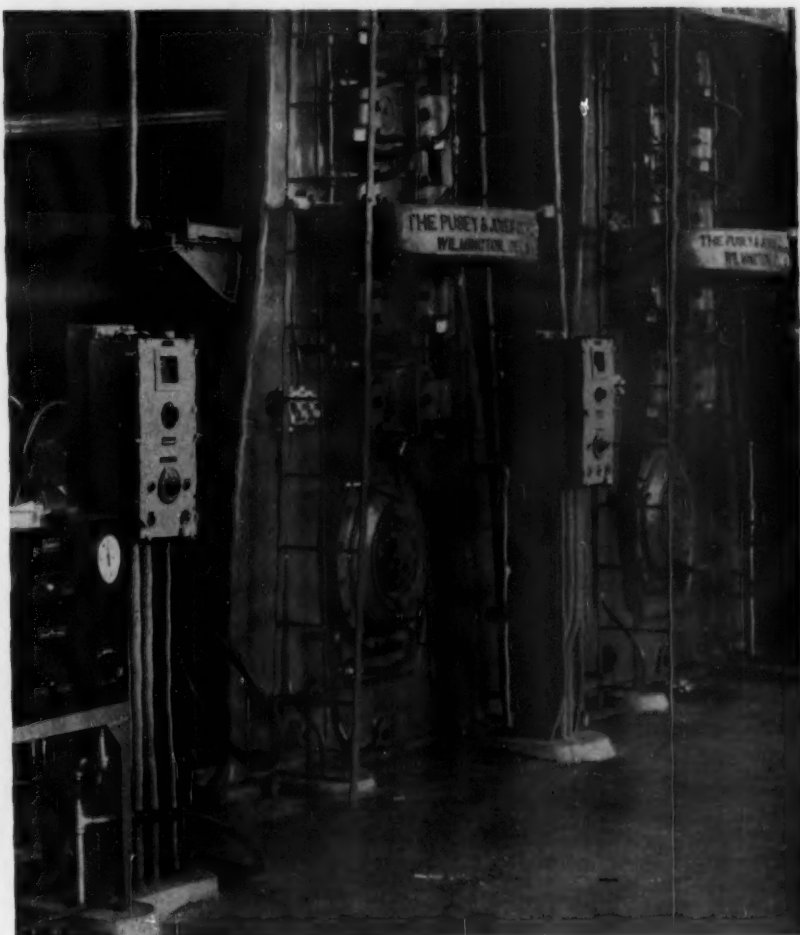
Sensitive yet stable, it holds moisture content accurate within $\frac{1}{4}$ of 1%.

Can be used for any speed ma-

chine — any width machine. Is suitable for *all* grades or weights of paper.

Provides individual pneumatic break control at each control station. Cuts downtime due to dry breaks . . . speeds recovery since it automatically handles steam to machine under all conditions.

Eliminates human errors . . . makes for more uniform sizing and coating. Pays for itself in a very short time — in some cases in less than a week.



CONTROLS MOISTURE CONTENT AT...

Breaker Roll
Single or Multiple
Dryer Sections
Size Tub
Coating Press
Reel

Control System as much as 7%

Points up machine troubles
such as improper drainage, varia-
tions in sheet furnish, changes in
press operation, freeness, con-
sistency, felts or air removal.

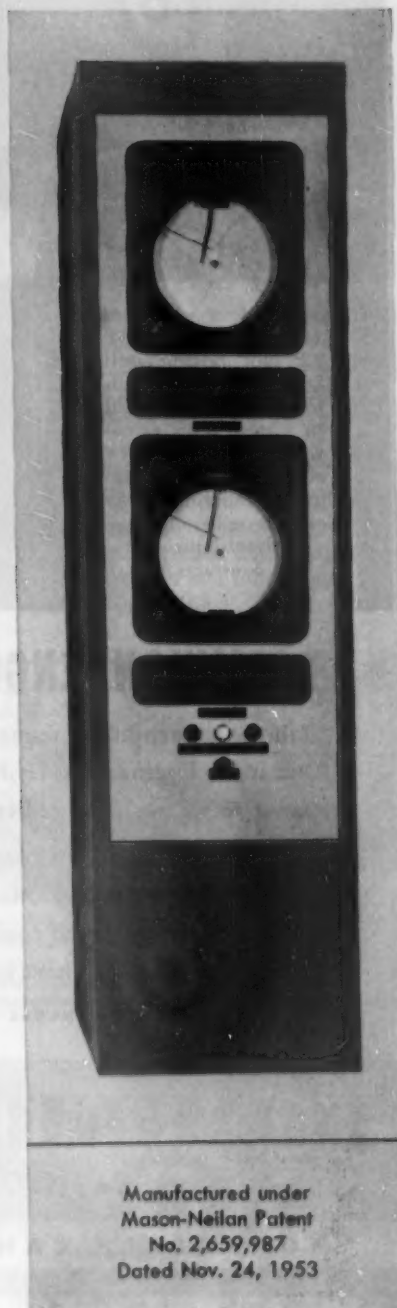
You should know more about this
versatile Moisture Control System
... and what it can do for your mill.
Complete information will be fur-
nished on request.



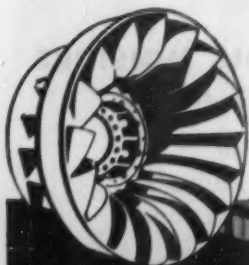
MASON-NEILAN REGULATOR CO.

1181 ADAMS STREET, BOSTON 24, MASS., U. S. A.

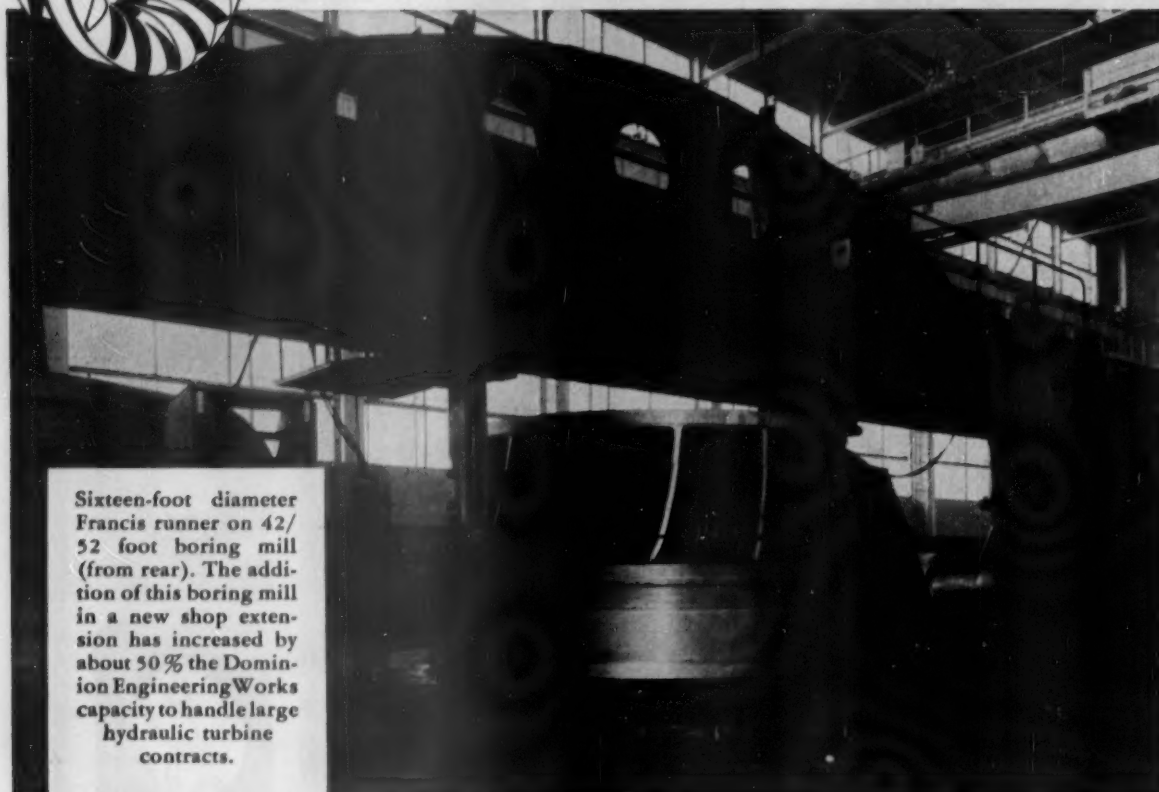
Sales Offices or Distributors in the Following Cities: New York • Syracuse • Chicago • St. Louis • Tulsa
Philadelphia • Houston • Pittsburgh • Atlanta • Cleveland • Cincinnati • Detroit • San Francisco
Boise • Louisville • Salt Lake City • El Paso • Albuquerque • Odessa • Charlotte • Los Angeles
Corpus Christi • Denver • Appleton • Birmingham • New Orleans • Dallas • Seattle
Mason-Neilan Regulator Co., Ltd., Montreal and Toronto



Manufactured under
Mason-Neilan Patent
No. 2,659,987
Dated Nov. 24, 1953



**IN CANADA AND NEW ZEALAND...
IN BOLIVIA AND BRAZIL...**



Sixteen-foot diameter Francis runner on 42/52 foot boring mill (from rear). The addition of this boring mill in a new shop extension has increased by about 50% the Dominion Engineering Works capacity to handle large hydraulic turbine contracts.

DOMINION ENGINEERING HYDRAULIC TURBINES

Half the tremendous volume of water power developed in Canada has been harnessed by Dominion Engineering Hydraulic Turbines. So too have hundreds of thousands of horse power in widely-scattered lands around the world.

Since 1945, the Company has taken orders for hydraulic turbines totalling over 5,800,000 horse power. More than 1,400,000 horse power of this total represents turbines for export to such countries as Brazil, New Zealand, Ceylon, Bolivia. The facilities and experience which have achieved this record are at your service anywhere in the world.

WRITE FOR GENERAL BULLETIN NO. 201 ON DOMINION HYDRAULIC TURBINES

DOMINION ENGINEERING
COMPANY LIMITED

MONTREAL, CANADA



CABLE: DOMWORKS

SAFE CONTROL

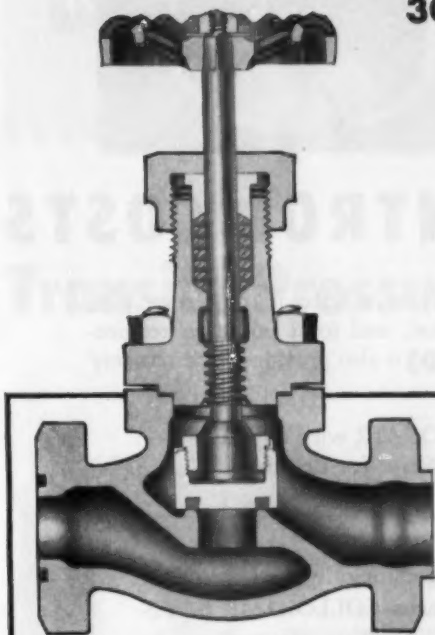
for ammonia and other
hard-to-handle fluids

CRANE

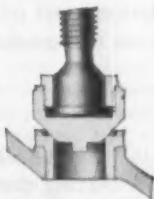
300-pound heavy-duty all-iron valves

Put these Crane valves to the test—use them for ammonia, air, oil, gas, caustic solutions, chlorinated compounds, alcohols—for chemicals and process work. Their rugged bodies of Ferrosteeel (35% stronger than cast iron)... their precision seating designs... the unusually deep stuffing box and high-grade packing... the sweeping interior body contours... assure the safety and lasting service you want.

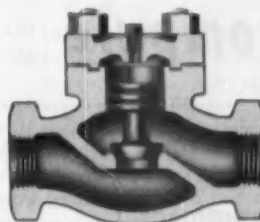
The line includes *bolted bonnet* globes and angles with choice of disc, *union bonnet* globes and angles with plug-type disc, lift checks, expansion valves, relief valves, liquid gauges—and all the fittings, flanges, return bends and other specialties for a complete Crane Quality installation. Check with your Crane man.



Cross-section bolted bonnet Globe, with flanged ends and special lead-faced disc. Sizes 1/4 to 4-inch.



Bolted bonnet Globes also available with steel disc and seat where high temperatures or corrosion prohibit use of lead.



Cross-section, Lift Check with bolted cap, and cushioned disc action which increases valve life. Sizes 1/2 to 2-inch.



New 6-page folder AD1977 catalogs this complete Crane line. Write direct, or ask your Crane Representative.

THE BETTER QUALITY... BIGGER VALUE LINE... IN BRASS, STEEL, IRON

CRANE VALVES

CRANE CO., General Offices: 836 S. Michigan Ave., Chicago 5, Illinois
Branches and Wholesalers Serving All Industrial Areas



VALVES • FITTINGS • PIPE • PLUMBING • HEATING

PULP & PAPER — April 1954

BULKLEY-DUNTON announces

THE FIRST LOW-PRICED SAVE-ALL DESIGNED FOR POLLUTION CONTROL

NEW
FLOTAIR

(Companion to the COLLOIDAIR SAVE-ALL)



CUTS POLLUTION-CONTROL COSTS

Where low-cost furnishes do not justify high expenditures for fibre recovery in the control of pollution, FLOTAIR is ideal. This new, circular flotation save-all is designed specific-

ally to clarify white water in compliance with state, regional, and local pollution requirements . . . and it also provides good recovery of fibre.

compare the installation costs of FLOTAIR with any save-all system on the market. Write for details now!

**White water
treatment
systems for
all your needs**

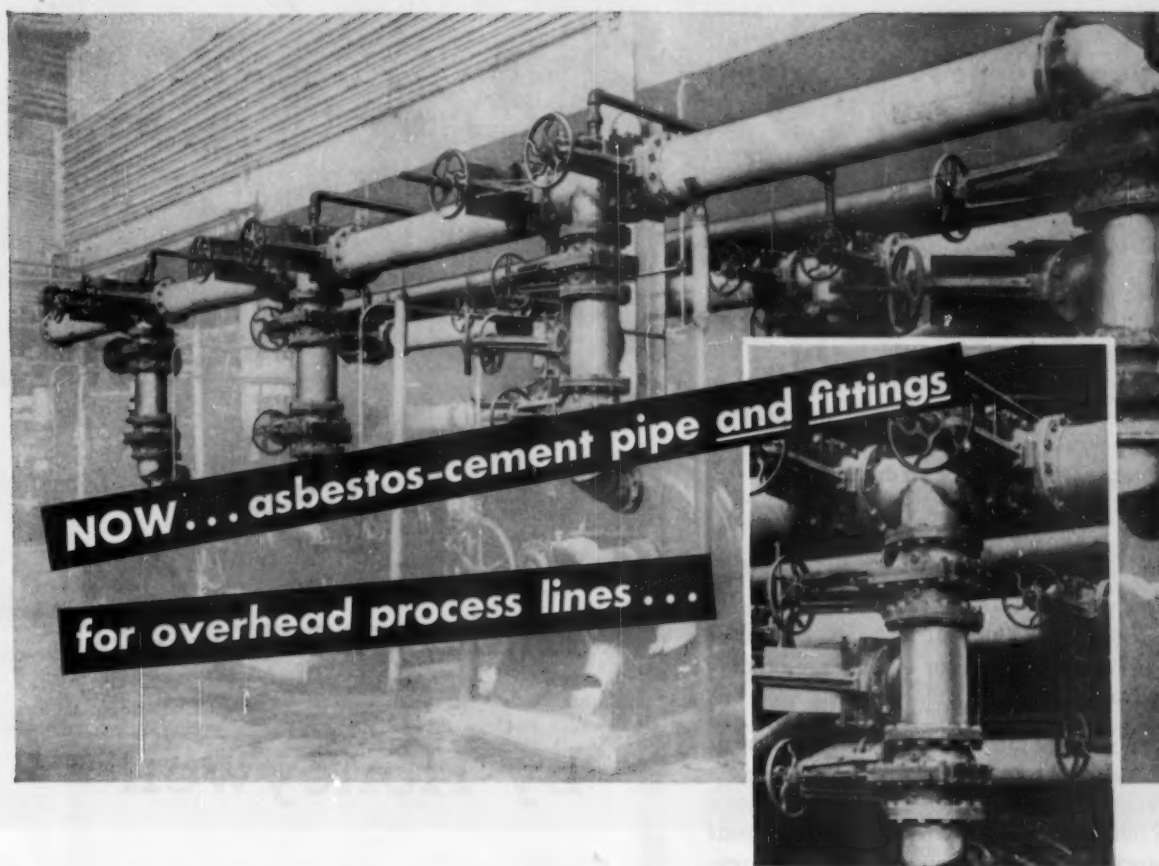
Bulkley-Dunton offers you a complete line of white water treatment equipment including the famous COLLOIDAIR SAVE-ALL for high efficiency fibre recovery and the outstanding new F. E. ROTARY SAVE-ALL. A full staff of engineers is also at your service, and we are prepared to design and supply special units for specific requirements. Write for details!



BULKLEY-DUNTON PROCESSES, INC.

Dept. C-2, 295 Madison Ave., New York 17, N. Y.

Pacific Coast: Dept. C-2, Security Bldg., Pasadena, Calif.



Transite Pressure Pipe provides high carrying capacity and economical, efficient service...



You can now obtain Transite* asbestos-cement Pressure Pipe with Transite-lined Streed Fittings for your overhead process systems. This permits the installation of high strength non-metallic pipe for handling raw and treated water, washed and unwashed pulps, stocks of all kinds, multi-stage bleaching systems (except direct chlorination) and certain mill wastes. There is no better way to provide clean pulp and stock than by handling it through Transite Pressure Pipe.

Low installation costs—Transite is light in weight, easy to handle, and can be drilled, cut, threaded and machined with standard tools. And, because its carrying capacity stays high, you can specify the smallest diameter pipe necessary... thus making the minimum capital investment.

Low pumping costs—Transite Pressure Pipe offers exceptionally low frictional resistance to the flow of liquids (flow coefficient $C=140$ for water). Since it is resistant to sliming and bacterial growths, this high carrying capacity is continuously maintained so that pumps can be operated at maximum efficiency and lowest cost.

Low maintenance costs—Transite cannot rust and is highly resistant to the corrosive action of mild acids and alkalies. Consequently, it requires a minimum of maintenance throughout its long life.

For underground service too, such as water supply or fire lines, Transite Pressure Pipe offers the same outstanding advantages. To obtain further information on Transite Pipe Systems for paper mills, write Johns-Manville, Box 60, New York 16, N. Y.

*Reg. U. S. Pat. Off.



Johns-Manville TRANSITE PRESSURE PIPE

When you need instrument service . . .

Ever have a tire blow out while you're traveling late at night? If it happens near a service station, you're lucky. But if it's on a lonely road far from town, you've got trouble.

When it comes to service on instruments, you don't need to take chances on being lucky. Because when you have Honeywell instruments, you've always got the comfortable feeling that service is close at hand . . . whenever and wherever you want it . . . from the world's biggest instrument service organization.

Over 110 Service Centers

No matter where you may be, there's a Honeywell service man near you. Offices are located in more than 110 cities of the United States and Canada, near every large production center.

When you run into trouble, just telephone or wire the nearest of these offices. You'll get a service specialist promptly . . . often within a few hours. This quick attention to your needs protects your production schedules, and prevents delays that can cause costly stoppages.

Trained Personnel

Honeywell service men are thoroughly trained for their important responsibilities. In the Honeywell factories, hand-picked men learn both the theory and practice of instrument maintenance. Then they serve an apprenticeship in the field offices, to gain further first-hand experience. You can be sure that the Honeywell man who calls at your plant is a qualified specialist, well versed in the practical art of keeping good instruments in the best condition.

Periodic Service

But why wait for emergencies—when you can prevent them with periodic service. Under a simple contract, a Honeywell man will visit your plant at regular intervals to inspect, clean and adjust your instruments and controls. The plan is economical, and can save you hours of production time. Our nearby branch office will be glad to give full details on Honeywell Periodic Service.

Centralized instrumentation by Honeywell *helps implement*

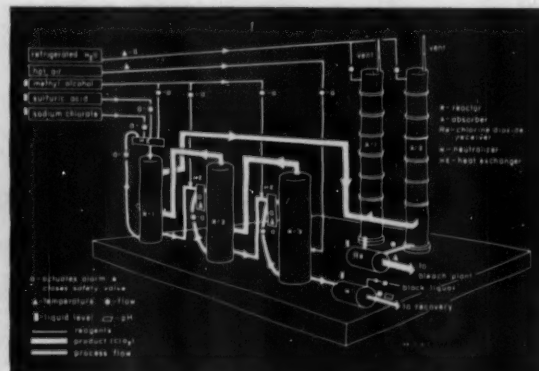
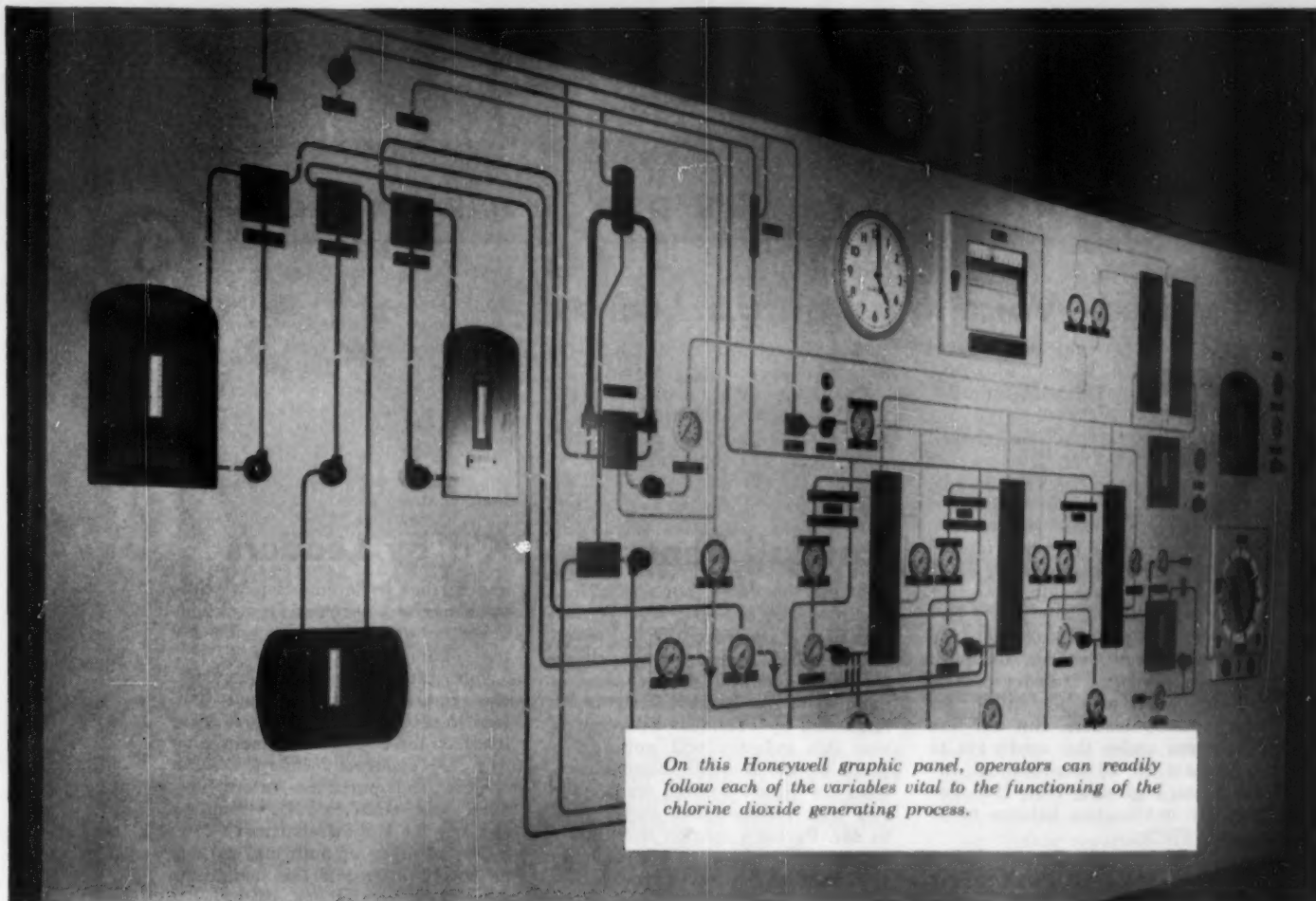


Diagram shows the basic elements of the Solvay system.



On this Honeywell graphic panel, operators can readily follow each of the variables vital to the functioning of the chlorine dioxide generating process.

new ClO_2 generation process

PAPER MILLS can now utilize the superior qualities of chlorine dioxide in pulp bleaching, through the use of a ClO_2 generating process developed by the Solvay Process Division of Allied Chemical and Dye Corporation. The high degree of close control required by the process is obtained through application of modern instrumentation, and operation is maintained on an economical, high quality basis.

This process reacts sodium chloride, sulfuric acid and methyl alcohol together in a continuous refluxing system. And at every stage, values of flow, liquid level and temperature must be accurately measured and controlled. Several installations of the new process, utilizing Honeywell instrumentation, have already been made. The multiple functions of process control are all concentrated on a Honeywell graphic panel, which displays each unit of equipment and its related variables in readily understood pictorial form. Engineered by Honeywell for the specific requirements of this process, the control panel makes it easy for an operator to learn how the process works, and to supervise its functioning.

The variety of instrumentation on this panel is a good example of the breadth of the Honeywell line. For it includes *Tel-O-Set* miniature indicators and controllers for temperatures, liquid levels and flows; *ElectroniK* pH control; and a master *ElectroniK* recorder which groups sixteen different records of remotely measured variables. And behind the scene is a complete safety system, utilizing *Pressuretrols* which operate alarms and shut down equipment in case of system trouble.

The extensive line of equipment, and the broad application experience which Honeywell has built up through years of work with the paper industry, are ready to serve your specific control problems. Call on your nearby Honeywell sales engineer for a detailed discussion of your requirements . . . he's as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO.,
Industrial Division, Wayne and Windrim Avenues,
Philadelphia 44, Pa.

● REFERENCE DATA: Write for Bulletin 2802, "Instrumentation for the Paper Industry" . . . and for Data Sheets on Specific Applications.



MINNEAPOLIS
Honeywell
BROWN INSTRUMENTS

First in Controls

Promised—Voice in Future U.S. Loans

HERE'S BIG NEWS out of the 1954 Paper Week in New York—"off-the-record" but learned authoritatively by PULP & PAPER:

This industry's top management has been assured by Secretary of Commerce Weeks that there will be no more loans of American money to construct potentially competitive pulp and paper industries in foreign lands, without first advising with this industry's leadership.

This refers specifically to the Export-Import Bank's \$16,000,000 loan to build a new lumber, chemical pulp and newsprint industry in New Zealand, protested forcefully by U.S. industry leaders. But too late—advances under this credit are to be prepaid in 20 semi-annual installments, beginning Nov. 1956. Interest on outstanding balance to be paid at 4 3/4%.

In similar connection, industry leaders heard their official strong protest against Alaska mill exclusively serving Japan has had effect. Now reported the project is dropped.

This industry is having a bad time trying to get information from the Foreign Office Administration, PULP & PAPER also learned authoritatively at Paper Week. This industry cannot find out—or hasn't so far—how much money is going into Austria for pulp and paper mills, within easy grasp of Russian military might. It is believed the figure is \$20,000,000. But, no information for this industry from Harold Stassen or his staff in the FOA.

The under secretary of treasury has been most cordial to this industry in regard to the internal reve-

nue code—came to APPA to get its industrial taxation philosophy.

Commerce department cooperation has been outstanding—and its top men say no other industry has done so much as pulp and paper to assist the department.

The World Bank is cooperative,

Randall Report Is OK'd by Leaders

ANOTHER BIG EVENT, but not in formal programs of Paper Week—word was passed along from Cola Parker, former APPA president, now chairman of Kimberly-Clark, and a member of the Randall Commission appointed by President Eisenhower, that this industry will not be injured by the Randall recommendations for future foreign trade policies and international agreements. In Mr. Parker's opinion this industry should agree wholeheartedly with the Randall report, which now faces the Tariff League attacks on one side and the "give-away" elements flanking drive on the other.

This nation is the bulwark of the free world, and must not dissipate its strength by weakening trade concessions—that was the consensus of this industry's tariff policy task force which wrote proposals submitted to the Randall Commission. It turns out these are almost identical with those the commission adopted.

By coincidence a steel industry executive and attorney, closely identified with writing of the Randall report, was in New York. He told PULP & PAPER Mr. Parker's views changed during his service on the commission toward more liberal convictions, but he strongly opposed

voluntarily came to this industry.

Interstate Commerce Commission and carriers rate pulp and paper very high.

The interpretation of anti-trust and monopoly legislation is definitely more favorable for this industry. Punitive, destructive actions can be considered as buried bugaboos of the past.

any further trade concessions without something in return from the favored countries or country. To this the commission agreed.

Our informant said the commission envisages that its report will lead to setting up a new trade body in which the U. S. Trade Commission will be eventually merged, with powers and purposes strictly defined and controlled by Congress and not the State Department.

One member of pulp and paper's tariff committee told this magazine: "The U.S. already has given away 75% of its bargaining strength in trade and should go exceedingly slow in further concessions."

When Mortimer E. Graham, chairman of the committee, and secretary of Hammernill, presented the industry's official viewpoint at the open meeting in the Waldorf, an interested listener was Robert Fowler, president of the Canadian Pulp & Paper Association, who has several times advocated lowering U.S. paper tariffs. As a guest of the APPA in the meeting, Mr. Fowler declined to comment on the speech.

Others on Graham's committee—Harold Murtfeldt, sales manager and attorney, Consolidated Water Power & Paper Co.; Gabriel Ticoulat, vice president (sales), Crown Zellerbach; and Carroll Wilson, Champion Paper & Fibre.

Here follows an exclusive report from the Graham address:

OUR TARIFF POLICY

By Mortimer E. Graham

(Excerpts from address at APPA Meeting)

IF THE FREE world is to survive, the U. S. must maintain its prosperity.

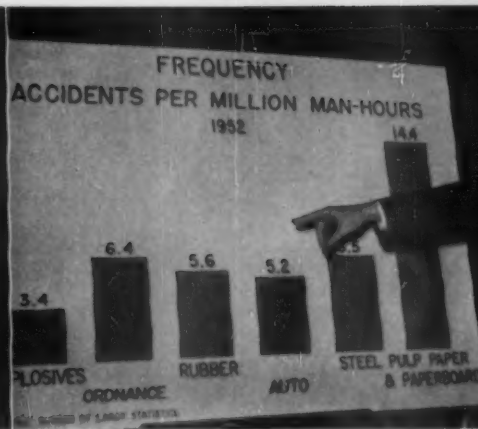
This is the major premise agreed upon by the APPA's task committee.

From the beginning each member had a different viewpoint. In order

Four Big Meetings Are In Offing

Now that Paper Week 1954 is in the limbo, Tappi is sponsoring four more big meetings this year. It has, of course, many others, but these are the "Big Four" and will draw attendance from all over North America, and from abroad, too:

Coating Conference	Poland Springs, Maine	May 24-26
Fundamental Research	Appleton, Wis.	Sept. 21-24 (world scope)
Alkaline Pulping	Birmingham, Ala.	Oct. 6-7-8
Engineering Conference	Philadelphia, Pa.	Oct. 18-20



Presidency Passes On — Sheehy Lays Safety Facts on Line

DONALD S. LESLIE, President of Hammermill Paper Co., receives wishes for success as new President of American Paper & Pulp Assn. from his predecessor, SYDNEY FERGUSON, Chairman of The Mead Corp., who served two terms. A moment before this picture was snapped Mr. Ferguson had modestly reviewed his terms and received a standing enthusiastic ovation at a crowded meeting room in Waldorf, New York.

JAMES T. SHEEHY, Executive Vice Pres., Rayonier Inc., was given often too-dry subject—safety—to talk about. But this U. of Washington alumnus and ex-engineer had his nationwide top management audience sitting on edge of their seats as he quickly laid tough facts on line—he points to figures showing pulp and paper last time accident frequency rate of 14.4—compared to only 3.4 for explosives, 6.4 for ordnance—supposedly “dangerous industries.”

to resolve these differences, we decided to get down to fundamentals. The further we went into fundamentals, the further we were in agreement.

Thus, the major premise that there must always be a solvent and prosperous American economy was agreed upon before we made any recommendations.

We submitted our ideas on what should be done for a permanent solution to the tariff problem to the ways and means committee (Congress):

1. We advocated permanent, stable legislation on tariff policy.

Congress has the power to determine tariff policy and set the rate policy. But 1930 was the last time Congress did that. In 1934 permission was given to the president to set the rates. Our committee believes Congress should not abandon a right which they have, although they certainly can delegate it. This policy should be to increase the purchasing power of the U.S. people—a trade-not-aid policy.

A tariff policy must be a legislative policy enacted by Congress. Our committee advocated a true and mandatory reciprocity. We must obtain something in return in the field of international trade—not in diplomatic or political circles (the Roosevelt policy).

2. We advocated protection and preservation of the U.S. economy—not a protective tariff in the historical sense—but a compensatory, minimum tariff. Tariff rates should be as low as they can be, permitting our industries to live.

3. We opposed as a general policy any tariff on imports which favors one nation more than another. There should be multilateral bargaining wherever possible.

4. We advocated taking back from the president's hands the tariff rights Congress should have.

The committee believes the tariff situation should be studied by some fact-finding board and suggested that tariffs be enacted by Congress without any power in the executive to change rates. However, our committee believes in the delegation of administration of tariff matters, but only in important matters.

(Shortly before this speech was made, the American Newspaper Publishers Association advocated raising the “newsprint” grade definition, to all allow free into U. S., 500,000 tons more Canadian paper. Book and printing paper manufacturers in U. S. were fearful this would be aimed at them).

Investors Eager to Know This Industry—Tinker

ONE OF PLEASANTEST reports of many that Ted Tinker, a veteran executive secretary of APPA, had to make was when he told the distinguished management audience which Secretary Tom J. Burke gathered for his annual Sulfit Paper Mfrs. luncheon:

“We have never before seen such a demand being made upon the financial editors of newspapers and magazines for information about the pulp and paper industry for invest-

ment houses and the financial world. These editors have asked us to appoint a committee to furnish them with this information.”

Mr. Tinker reported business men from this industry were still finding a welcome generally in Washington and appreciative response to their contacts with government.

To the Kraft Association, he told of the vast amount of work done by 23 committees with 300 members in APPA. He cited a \$200,000,000 payroll of the U.S. pulp and paper industry as reason for one of the “most active industrial relations programs” in any U.S. industry.

HEAD MEN FOR 1954

Elected leaders of these associations during Paper Week:

American Paper & Pulp	Don Leslie, Hammermill
Pulp Consumers	Carlton W. Smith, Moraine Paper
Pulp Producers	James L. Ritchie
Salesmen	H. M. Early, Int. Paper
Stream Improvement	G. E. Dyke, Rebl. Gair
Tappl	Geo. H. Pringle, Mead Corp.
Sulfit Paper Mfrs.	Wayne A. Brown, Crown Z
Writing Paper Mfrs.	Hale Halden, Byron Weston Co.
Groundwood Paper	Samuel Pruyn, Finch, Pruyn
Newsprint Bureau	G. E. Young, Crown Z
Kraft Paper	Walter C. Shorter, Camp Mfg.
Paper Napkin	R. L. Fenstemaker, C. A. Reed Co.
Glassine & Greaseproof	Olaf Hedstrom, Hartford City Paper
Tissue	W. J. Servotte, Bay West Paper
Blotting Paper	Graham A. Carlton, Standard Paper
Coated & Processed Paper	L. R. Clark, Hampden Glazed Paper
Specialty Paper & Board	A. P. Mitchell, Riegel Paper



Father and Son—Past and Future APPA Presidents?

REUBEN B. ROBERTSON SR. (left), who just six years ago completed two terms as president of APPA, congratulates his son, REUBEN B. ROBERTSON JR. (right), after election as First Vice President of APPA. That means the son can probably have the Presidency two years hence—if he wants it, or for some business or other unlikely reason he drops out. R. B. Jr. also succeeded his father as Pres. of Champion Paper.

SPEAKERS AT OPEN MEETING during Paper Week (l to r): REUBEN B. ROBERTSON JR., Pres. of Champion; J. T. SHEEHY, Exec. Vice Pres. of Rayonier; DON LESLIE, new Pres. of APPA and Pres. of Hammermill; SYDNEY FERGUSON, retiring Pres. of APPA and Chairman of Mead; MORTIMER E. GRAHAM, Secretary of Hammermill and Chairman of this industry's task force which presented its views on tariffs to the Randall Commission.

GUNNAR NICHOLSON (left), Executive Vice Pres. of Union Bag & Paper Corp., in accepting 1954 Tappi Gold Medal, said next field in which this industry must develop technical knowledge is in forestry and wood production. KARL O. ELDERKIN (right), Vice Pres. of Tappi and Vice Pres. and Gen. Mgr. of Bowaters Southern Paper Corp., presented medal. Both men spent early years in Canada, then became leaders in South.

Top Execs Unanimously Optimistic

MORE THAN A MONTH has passed since that unseasonably warmish and studiously serious 1954 Paper Week. But here is news now of one of the biggest events of that Week—unpublished but momentous news—the “off-the-record” but unanimously cheerful and optimistic outlook underwritten by no less than 27 outstanding top executives of this industry.

In some of the closed meetings and Wall Street offices there was buzzing and questioning of the whys and wherefores of this solid phalanx of optimism. But no matter how thin or thick you slice it, 27 top executives represent a lot of “insurance” for a longterm stable outlook for pulp and paper. Nothing has happened since Paper Week to shake the optimism. Operating levels for some periods since then have been higher than a year ago.

U.S. mills made a record 26,621,610 tons of paper and board in 1953, 2% over the '51 record and 9% over '52. This is five times 1921. Since 1900, consumer demand has increased an average of 4% per year. Another 1953 record—woodpulp production of 17,524,929 tons, 6% over the '51 record.

Perhaps most significant statistic of all came out weeks after the annual New York meeting. The population of the U.S. for this year 1954 is now officially calculated at 161,100,000 souls. At that rate it should

easily hit 200,000,000 to 210,000,000 by 1975. Per capita consumption of paper last year was 393 lbs., six times what it was in 1900! And already 100 lbs. more than it was when World War II ended! Sheer population growth plus increasing paper uses are two solid pillars for future building.

Speeches of secretaries of the associations on future outlook were, in some cases, gone over with a fine tooth comb in New York. Some were altered at dress rehearsals at the behest of manufacturers. Good news heard from many manufacturers at the Waldorf revealed that this time inventories are comfortably low. The American companies are generally doing a better job of controlling their costs. There were even good signs of a shortage of pulp in the world market.

For the future outlooks on pulp as presented at Paper Week see Feb. issue of PULP & PAPER (pages 40-41). For a summary of George Olmsted Jr.'s Paper Week analysis of the outlook up to 1975 see the Mar. issue (pages 54-55).

Yet a “94% year” in 1954 is expected to make everyone who voiced an opinion at Paper Week benignly happy. But for longterm growth, it seemed clear enough to serious thinkers at Paper Week that future major expansion is going to be possible—will have to be done by the companies with timber and

with the facilities to make woodpulp on a major scale.

For Good of Whole Industry

There was another important undercurrent at Paper Week. Never before was it so evident that the leaders were so eager to work together for common good. They thought of their industry as one unit. This point of view did not mature easily in an industry where many big units were family-bound, company-selfish in past decades. Amazing thing is that today the men who in the forefront of fighting for this industry citizenship are themselves scions of old paper families, bearing famous names of historic ownerships.

The 11 regions organized coast to coast for cooperative community relations programs—unique in any industry in America—is an example of this spirit of 1954. But there was also a sense of camaraderie in planning production and sales, perhaps more critical now for the industry's future.

An intelligent industry statesmanship was evident at this year's Paper Week. Especially among many paperboard manufacturers, taking a longer and industry-embracing view. It was a statesmanship befitting an industry that can be ranked as 5th or 6th largest in the U.S., depending on your selection of premises.

Four Reasons for Good 1954—Ferguson

SYDNEY FERGUSON, Mead chairman, turned over the presidency of APPA to Don Leslie of Hammermill at Paper Week with the comment that his two years in the office had been a "Coolidge era."

He said he had the "good fortune to follow one of the most vigorous and able young men in the industry"—George Olmsted Jr., president of S. D. Warren Co.—who started many new APPA projects, and was being succeeded by "another equally vigorous young man."

The retiring British-born chief, who started his career as a charter accountant in London but got into the pulp and paper business in America early, said 1954 should be a good year because:

1. The government for the first time in years is getting control of its expenditures.
2. An election year will heighten

demands for printing papers.

3. It is comparable to 1952, which started with uncertainty.

4. Finally—it's "almost an insult" to ask paper salesmen, who really have had to do very little selling in past years, to increase their sales by only 5%.

He said "stable earning power is giving paper company securities a favored position among informed investors."

He approved the Randall report on tariffs.

He recommended closer liaison with NPA and CPPA:

1. A joint committee of officers of APPA and the National Paperboard Assn. to "speak for the whole industry." He urged closer liaison with NPA.

2. Closer rapprochement with the Canadian Pulp & Paper Assn.

threat of further government intervention in this field. Safety is packed with emotion and could be, under unfriendly auspices, the basis for attack on industrial management.

As chairman of this committee, I suggest that we take an honest look at how various industries compare. I have chosen half a dozen representative industries. Several appear highly hazardous. All are representative of heavy manufacturing. Let us see how they stack up in frequency rates for the latest reported year, 1952 (lost time accidents per million man-hours exposure):

Explosive ...	3.4	Rubber	5.6
Steel	6.5	Ordnance ...	6.4
Auto	5.2	Pulp-Paper ..	14.4

I have gone to some pains to find why explosives show such a low frequency. A safety attitude has existed in that industry more than 150 years. Accident prevention is a by-word.

The steel industry is another where safety consciousness goes back many years. I am told the slogan "Safety First" was coined by U. S. Steel Corp. shortly after its formation some 50 years ago.

Auto manufacturing employs thousands in highly repetitive operations and utilizes thousands of tools. Operations are exposed. The rubber industry uses a great variety of chemicals and a great variety of presses and intricate equipment. The ordnance industry is also inherently hazardous.

We come to the pulp, paper and paperboard industry; inherently not particularly hazardous. Danger of fire is minimized. Volatile solvents are not employed but, instead, great quantities of water. The average unit weight of materials handled is

The Way to Attack Safety Problem

By James T. Sheehy

Executive Vice President, Rayonier Inc.

(Excerpts from address before APPA management men)

I ASK YOU to step out of this industry a little while.

Let's constitute this group as a special committee to study the safety performance of American industry as a whole. Forget that you have any special pride in pulp and paper and look objectively at how industries measure up.

We are managers. We are discussing one of the most important man-

agerial responsibilities—prevention of accidents.

We have this responsibility to the people who work with us and our actions and policies will determine whether we operate safe mills. We have this responsibility to our stockholders since accidents cost money. One important reason this responsibility weighs particularly heavy is that we must remove any

A NEW LAB FLAT SCREEN SHOWN IN NEW YORK— AND BY WAY—CONGRATS TO GENTLEMAN AT EXTREME RIGHT!

THIS NEW LABORATORY all stainless flat screen was shown at Paper Week by SPROUT, WALDRON & CO. INC. It duplicates all services of commercial flat screen. The gentleman are (l to r): HENB ROWE, Technical Director, Nekeosa-Edwards Paper Co.; ROBERT T. INMAN, Chief Engineer, Construction Dept., Union Bag & Paper Corp., and ROBERT E. HARPER, Director of Purchases, Rhineland Paper Co.

BY THE WAY, Mr. HARPER was promoted Mar. 1 to that new position after serving as Assistant to Vice Pres. Ben Cancell (Operations) for past year, and for eight previous years as Administrative Engineer. Graduate of Univ. of Nebraska, he joined Rhineland 22 years ago. Also has had charge of new construction.



PAPER WEEK REPORTS

relatively small. Much processing is in closed vessels under mechanical control—yet this industry shows a rate of 14.4—more than twice ordinance, rubber, or steel and almost four times explosives. Most hazardous part of this industry is not included. Many companies are directly associated with logging and lumbering. Yet with this unfavorable performance removed, the industry still does not measure up favorably.

If you members of our mythical committee view these figures objectively, I am confident that you would tend to censure this industry.

Let's return to our role as managers of pulp and paper companies. We have had a committee of managers in general tell us that we are not doing very well. What kind of a defense do we have? We cannot rely on any idea we are operating a more hazardous industry. A lot of industries are more hazardous.

Defense Is Historical

We can turn to a historical defense. During World War II, we did not have enough man-power to fight a war. We recognized a most serious drain on man-hours is the industrial accident. We moved to action when it became a matter of dollars and cents. A concerted effort was undertaken by the industry. But improvement came because individual companies and managers, each working to his best interest, applied themselves to the problem with the same vigor that they applied to financial, manufacturing, and sales problems. A problem attacked this way is soon brought under control.

Pulp and paper industry's average frequency has dropped from 26.9 in 1946 to 14.4 in 1952, about 47%. For all manufacturing, the Bureau of Labor Statistics reports a drop from 19.9 to 13.5, about 32%, for the same period. This places pulp and paper in a good light, except our performance prior to 1946 could not be considered creditable. We will continue to be in a defensive position until we can make further substantial reductions—at least as great percentage-wise as we have already achieved. I cannot believe any one here is satisfied with the industry's performance.

More Must Be Done

You cannot buy good-will, and you cannot buy an effective safety performance. You can, however, earn respect, and a vigorous, sin-



PLANNING BIG DOING AT APPLETON

THEY TALK ABOUT PLANS for Executive Conference in Appleton, Wis., May 20-21. These are Trustees of the Institute of Paper Chemistry, during Paper Week: Seated l to r: WEST-BROOK STEELE, Institute President; SYDNEY FERGUSON, Mead Corp.; ERNST MAHLER, Kimberly-Clark Corp.; DAN K. BROWN, Nee-nah Paper Co. Standing l to r: JOHN G. STRANGE, John Strange Paper Co., Institute

Vice President; A. B. LAYTON, Crown Zellerbach Corp.; Dr. DOUGLAS M. KNIGHT, Lawrence College; GEORGE E. DYKE, Robert Gair Co.; STUART E. KAY, International Paper Co.; DONALD S. LESLIE, Hammermill Paper Co.; W. IRVING OSBORNE, JR., Cornell Paperboard; DAVID L. LUKE, JR., West Va. Pulp & Paper Co.; and GEORGE OLMSTED, JR., S. D. Warren Co.

cere safety program will earn for you the respect of your employees, their families, and, equally as important, the respect of the people in the communities in which you operate. It is the responsibility of executive management, production management, and plant supervisory personnel to see that everyone involved accepts full responsibility.

Effort should be continued through industry and regional committees. But none of this committee work will be of lasting value unless it stirs action on the part of individual companies.

Accidents cost money. Directly through insurance and related charges. They destroy valuable equipment. They disrupt the smooth working of a unit which sometimes requires days to restore. Accidents create a charge on every ton of product and products bear the bur-

den in the market. Accidents divert attention of supervision and management to a multitude of individual problems.

We will attain success in accident prevention when each of us accepts the thought that we are competing with every other unit in our industry for a safe record.

Make certain that all levels of management in your companies, including every supervisor, receive a spelled-out clear-cut policy on safety. Make certain that a statement of management's acceptance of the importance of accident prevention is incorporated in a spelled-out policy in each company's industrial relations handbook. Then your management associates and your employees and your neighbors will know for certain that your attitude on the subject of safety is completely sincere.

Gov. Adams Departed From Text

SHERMAN ADAMS addressed APPA just a short time after his boss, President Eisenhower, made one of his now familiar placating appeals for less violent Republican partisanship by his aides. It didn't slow down Gov. Adams, although he admitted: "My boss said 'never miss an opportunity to keep your mouth shut . . . keep your name out of the papers.'"

Departing from prepared text, Mr. Adams whaled into the Roosevelt-Truman administrations. He called them "two abnormal decades."

"Individuals surrendered responsibility to a government that suffered a decline in honesty," he said,

"created a climate in which spies and subversives and low grade public servants flourished."

He warned unless Republicans hold Congress in the fall elections, "the spending sprees and political orgies" of the past could return.

"Savings in government will be shared with the taxpayer as rapidly as is prudent," he said.

"We look forward to something better than balance in cash expenditures in the coming year."

U.S. military aim, he said, is for quick devastating counterattack.

"Attack would be only by a demented enemy . . . we do not think Russia is that demented."



This particular collection of glass, metal, rubber, rocks, cellophane, wet strength paper and what have you was taken out of Jonsson Screen rejects in a mill making interior wall boards.

Another mill puts 90 tons per day of excessively dirty stock through a Jonsson Screen and tells us that the

Screen paid for itself the first month, out of the saving in machine wires and felts.

For taking out junk like this, and for removing knots, knuckles, cockle burrs, uncooked fibres — anything you *don't* want in your stock — the Jonsson Screen is your one best bet. Ask us to prove it.

BIRD MACHINE COMPANY
SOUTH WALPOLE • MASSACHUSETTS

100 Stories — And Strictly Personal

STURE G. OLSSON, who came to the Waldorf meetings Paper Week as president of Chesapeake Corp. of Va., having succeeded his father, ELIS OLSSON, now chairman, lives in a former farm home of Gen. Robert E. Lee, five miles out of West Point, Va. . . . RUSSELL F. ERICKSON, vice president—engineering and plant development, Rayonier, looked in on friends at the Commodore. They learned he's a father again—baby daughter born to the Ericksons just two months before. Makes three, others being 6 and 9 . . . BEN CANCELL, vice president for operations, Rhinelander Paper, left his wife, Theodora (Ted) behind for a bonus week of seeing her old New York friends and haunts . . . Paper Week was occasion for happy family reunions with sons in the service and other children for BILL DAVIS, president of Potlatch Forests Inc., and Mrs. D. at the Lexington, and likewise for FOLKE BECKER, president of Rhinelander, and Mrs. B. at the Barclay . . . MILTON R. BAILEY, vice president, Bulkley, Dunton Pulp Co., turned candid cameraman at a convention party with his Zeiss Ikon and his brand new Ikonblitz flash attachment, but his one good picture was of an editor! . . .

ED KIEFER, board chairman of Port Huron Sulfit & Paper, recalled 21 years history of the Sulfit Paper Mfrs. Association when he sent his greetings to that body . . . BILL CONVERSE, of Sprout, Waldron & Co., Muncie, Pa., had interesting tales to tell of his two months trip around the world, mostly spent in Japan, Italy and Switzerland . . . WILBUR F. GILLESPIE, past Tappi president and tech. director for Gaylord Container, and wife, Estelle, exultant their 17-year-old daughter Glenn is "Miss All-Saint," highest

CHARLES SUMNER BARTON, President, Rice Barton Corp., Worcester, Mass., paper machine builders since 1837, was elected new Pres. of Pulp & Paper Machinery Assoc. in New York Feb. 15.



CHARLES S. BARTON ELECTED HEAD OF MACHINERY GROUP

student honor at her Episcopal All-Saints College in Vicksburg . . . R. S. (RED) JOHNSTONE, vice president of Pusey & Jones Corp., paper machine builders of Wilmington, Del., fresh from trip to Pacific Coast. Included visit at Tacoma Newsprint where second P-J machine is making paper . . . GEORGE E. DYKE, president of Robt. Gair, pleased to hear his son GEO. JR., is going to be Serrine resident engineer on semi-chemical and board mill project of Crossett. Has had valuable experience at Riegel and Coosa River mill projects, also

Movies, and Smorgasbord

DON QUIRK of Peninsular Paper showed guests at their suite some circus movies he took in Sarasota, Fla. . . . CLIFF CRISPIN, v.p. and pulp mgr. for MacMillan & Bloedel, came a long way from Vancouver Island . . . NILS JOHANESON and his Cellulose Sales colleagues put on usual smorgasbord (literally means "bread-and-butter table") . . . KVP men of Canada and U.S., led by A. SOUTHON, chairman, and DWIGHT STOCKER, president, got together

. . . BERT REIDER, chairman of Victoria Paper Mills, Fulton, N.Y., has traveled around to all continents in recent years . . .

ROY WATSON and others of Hubinger Co., gratified by wide acceptance of their OK brand corrugating starch No. 515-WR . . . 17 Mead Corp. execs headquartered at Park Lane . . . CLEM W. KOHLMAN, ad. manager, for industrial chemicals division, American Cyanamid, says popular interest in new paper applications is increasing. Lot of credit due invaluable publicity his company gave paper in television show, exhibits and stories in many publications . . .

J. J. DIETZEL, new representative in New York for Buckman Laboratories, Memphis, was introduced by BILL STITT, vice president . . . JIM HAIR, Crossett manager, said their new semi-chem mill and bleached board mill (194 in. cylinder machine) will be completed in 18 months . . .

While MORT GRAHAM of Hammermill was explaining the industry's official approval of Randall Commission tariff and trade recommendations in Waldorf meeting, his colleague on this industry's tariffs task committee, HAROLD MURTFELDT, sales manager, Consolidated Water Power & Paper, outlined similar view before converters meeting . . .

KEN GOEHEGAN, another past prexy of Tappi and v.p. of Howard Paper Mills, said he has been able to reduce considerably former extensive traveling . . . ARNOLD PLIER, pres. of D. J. Murray Mfg., answered many inquiries about new high speed multiknife waste wood chipper . . .

Is Sutherland Back on That Boat?

D. MANSON SUTHERLAND, president of Sutherland Refiner, came

RELAXATION AFTER SESSIONS

SAMPLE OF PAPER industry that had to compete with big Mining Congress and other conventions for theater tickets and night club tables (l to r): MRS. PETE (Esther) BARTHEL (he's American Cyanamid); JAMES J. FORSYTHE, a Northwestern U. and Institute graduate recently promoted to Specialty Development Engineer, I. P. Co., Niagara Falls; MRS. JAMES J. (Tish) HARRISON and her husband, DR. HARRISON, Tech. Dir., Michigan Carton Co.; GEORGE FROMM, Western Mgr., Chemicals Dept., American Cyanamid, and JAMES WELLMAN, Am. Cyanamid.





BELOIT AIR GUIDES have been tested by years of dependable service in guiding felts and wires. Air at moderate pressure provides smooth, prompt control at all machine speeds, without any ratchet mechanism. The rugged simplicity of the Beloit design means trouble-free operation with minimum operator attention and low maintenance cost.—*Beloit Iron Works, Beloit, Wis.*

WHEN YOU BUY BELOIT...YOU BUY MORE THAN A MACHINE!

BELOIT
PAPER MACHINERY

PAPER WEEK Personals

ashore from his boat long enough to attend sessions. With his hard-traveling son, LON, he held forth at Lexington as usual . . . **G. E. (SLIM) SEAVOY**, now v.p. and sales chief of Whiting, having turned over the Swenson pulp and paper department to **RALPH BERGSTROM**, was back to see old friends . . . **ISRAEL G. ROTHCHILD**, president of Vita Mayer & Co., in New York, whose Italian company has kraft mill near Milan which does more different things than any mill in world to abate odors . . .

CARL RICHTER, now chairman of Stebbins, enjoying advising his sons in their developing business in Delrac Co. . . . **DICK McDONALD** and **MIKE BUCKLEY** respiting from pressure of planning and building new mill in East Texas . . . **STANTON MEAD**, president, led good-sized delegation from Consolidated . . . Over 150 Maine alumni cheered **LYLE JENNESS**, head of chem. engineering there, for 1954 Maine Pulp and Paper Foundation award . . . illness caused **BURKE MORDEN** to miss first convention since becoming president of Morden Machines . . . **BLAKE HONEYMAN** and **HERB BECK** reported they have 800 installations in world . . . **BOB FULLER**, Gulf States, **MALC PINEO**, Brunswick, **FRED BISHOP**, Southland, and other kraft men planning Fall Alkaline meeting for Birmingham, Ala. . . .

AL BACHMANN v.p. of Missisquoi Corp. and of Supts. is a v.p. again—for Standard Packaging . . . **KARL LANDEGGER**, president of Parsons & Whittemore, new vice chairman of Black-Clawson, its president, **CLIFF CRAWFORD**, announced . . . **TOM BURKE**, secretary-treasurer of the Sulfite Paper Mfrs. Assn., made interesting suggestion that associations consider names changes to be more expressive of products . . . **JERRY STRASSER**, Morningstar-Nicol pa-



ANOTHER PAIR ON WHITE WAY

ROBERT D. RUSCH, Paper Mill Supt., Mosinee Paper Mills, who went there three years ago from I. P. North Tonawanda Mill where he was Tech. Supt., and his wife, **MARY**.

per dept. chief, brought in their **GUS SPORRE** from Vancouver, Wash., for his first convention . . . **ERNEST BROWN** elected v.p. of N.C.C. of Ohio during the meeting . . .

Steeles Sail for Europe

MATT T. FINN, Jr., formerly of Chicago and now manager of pulp and paper industry sales, apparatus sales division, General Electric Co., came to his first Paper Week in that capacity with delegation at Lexington headquarters. He succeeded **DON PUTNAM**, who moved "upstairs" as manager of industrial equipment component sales, over most all GE industry sales . . .

There were 21 officials and researchers from Institute of Paper Chemistry. They brought new, 32-year old president of Lawrence College and former Yale professor, **DOUGLAS N. KNIGHT**. Introduced him to industry trustees . . . **WESTBROOKE STEELE**, president of the Institute, and Mrs. Steele, left for an extensive trip in Europe, including just fun in Spain, particularly Barcelona, and business, too, in Germany, France, Switzerland and Britain . . . **DON McLAURIN** of Institute took their boy (14) and girl (8) on a Florida vacation which included "school-at-home" every day . . .



BROUGHT PULPING INFO

JOHN MEREWETHER (left), who brought dazzling auburn beard and new technical knowledge of eucalyptus pulping from "Down Under" where he is Lignin Chemist for Australian Papers Mfrs Ltd. Born in Queensland he graduated from U. of Sidney. **DON MacLAURIN** (right), Institute of Paper Chemistry, where he specializes in pulping research, was interested in Australian's paper.

ROBERT D. RUSCH, Mosinee superintendent, cornered by old associates of IP's North Tonawanda, N. Y. mill, which he left three years ago—**ART HAYES**, manager **LEO WHITE**, production mgr., **WARD ARNOLD**, technical supt. and Bob's successor there. Also by **J. J. FORSYTHE**, recently promoted to specialty engineer for development at IP Niagara, N. Y., mill, 12 miles from Tonawanda. . . .

PAT YUNKER, veteran instrumentation expert, who represents Suth-



TWO EX-WASHINGTON STATERS IN KEY POSTS IN THE SOUTH

KARL R. BENDETSSEN (left), born in Grays Harbor, Wash., and former attorney in that state after graduation from Stanford, is new Texas Division Mgr., for The Champion Paper & Fibre Co. He was Asst. Mgr. under W. R. Crute, who continues as company Vice Pres. Mr. Bendetsen had been Under Secretary of the Army before joining Champion in 1952. With the Army from 1940, he was member of the combined staff which planned the Normandy invasion and Deputy Chief of Staff under General Bradley. He held several Army Dept. posts after the war. Married; has 2 daughters.

DONALD E. LAWSON (right), a lifetime resident of Washington state until now and Resident Engineer in recent years at Rayonier's Port Angeles, Wash., mill, has moved to Rayonier's Fernandina, Fla., Mill as Assistant Resident Manager under Mgr. F. B. Doherty. He joined Rayonier in Washington in 1937 as a chemist after graduating from Wash. State College. He is married and has five children.

erland Refiner in the South, stirred with anticipation. Within month after Paper Week, he and wife Isobel expecting third child in their home in Buckhead district, Atlanta, Ga. Mrs. Yunker is from New Orleans. . . .

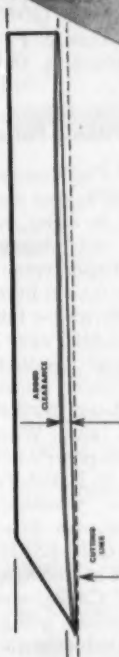
Easton Moving South Come June

PAUL EASTON, seeing old friends in new role as Deep South man for Lockport Felt, will look for new home along Gulf Coast come June. Eastons still live at 150 Crowell St., Hempstead, Long Is., till two children finish school . . . **O. F. HUTCHINSON** of New York, successor to Paul as sales manager for Sveen Pedersen savealls . . . **BOB DAVIS**, of Birmingham, Ala., Chicago Bridge man on industry corrosion committee, brought along **SANDY SANGDALL** of Chicago Bridge's Pittsburgh office . . . little early for wearing of green but Manhattan maelstrom brought together old Madawaska associates—**TOM BARRY** now manager of H.&W. Northern mills, and **J. W. D. HIERLIHY**, who succeeded Tom as Madawaska mill manager for Fraser . . . when **CURT YOUNG** of West Va., **JIM McALEER** of Masoneilan and **BILL METCALFE** of J. O. Ross huddled, you can bet drying paper was subject . . . **DR.**



CUT THE COST OF CUTTING

with a



A Simonds "Red Streak" Paper Knife gives you two important pluses — two reasons why it cuts cleaner, straighter stock . . . and more of it between sharpenings.

First, it has a supersmooth finish on the all-important face, or stock side . . . a gleaming, mirror-like surface that runs right up from the razor-sharp cutting edge.

Second, a Simonds Paper Knife not only tapers back from the cutting edge, *but is concave ground.*

Together these two exclusive features eliminate rubbing against stock, reduce knife wear, cut the cost of cutting — besides giving you freer, cleaner cutting.

Made of Simonds own S-301 Steel, you can bank on "Red Streak" Knives to give you many times more service, too. Sold by your Simonds Distributor.

SIMONDS

RED STREAK

PAPER KNIFE

SIMONDS
SAW AND STEEL CO.

FITCHBURG, MASS.

Factory Branches in Boston, Chicago, San Francisco and Portland, Oregon
Canadian Factory in Montreal, Que., Simonds Divisions: Simonds Steel Mill, Lockport, N. Y.
Simonds Abrasive Co., Phila., Pa., and Arvida, Que., Canada

PAPER WEEK Personals

JAMES FOOTE, gen. mgr. of Pulp & Paper Div., Diamond Match, sure made good friends at Hull, Quebec, in his year there. Several greeted him warmly . . .

Sad news extended travel of **CHARLES MCCARTHY**s (Plant Mgr. for Southern Paperboard, Port Wentworth, Ga. for her father's funeral in Northern New York . . . **CHARLES HAYES**, p. a. for Gair-American Coating Mills of Elkhart, Ind., decided on a diet after third big luncheon . . .

Man with dazzling full red beard at Tappi was **JOHN MEREWETHER**, lignin chemist for Australian Paper Mfrs., spending six months at Institute in Appleton. He gave paper on kraft pulping of eucalyptus . . . **VANCE EDWARDES**, "Seneca" of sulfite men, had them sitting up when he said many eastern sulfite mills are too small for economic solution to liquor problem. He recently visited Lebanon, Ore., and Wisconsin mills . . .

NEIL ROBERTSON, mill manager of West Tacoma Newsprint, and **EUGENE RODABAUGH**, pulping technologist with NY & Penn, re-united with ex-boss at Crossett, **KEN CHESLEY**, still there as research director . . . ears pricked up when someone said a young man couldn't look for more rounded experience than the "three C's"—Crossett, Cloquet or Camas . . .



JANETT SUCCEEDS MONTY; SANFORD JOINS IMPCO

LESLIE G. JANETT (left), has been elected a Vice Pres. of J. O. Ross Engineering Corp. and Mgr. of its Chicago office, succeeding A. E. Montgomery, retired. A Chem. Engineer graduate of Univ. of Wisconsin in 1935, Mr. Janett has been with Ross, covering Central and South areas of U.S. He was Engineering Officer on destroyer escort in war. Born in Fountain City, Wis.

GUY E. SANFORD (right), who has joined Improved Machinery Inc. "family" of Sales and Service Engineers, according to John Rich, President of Impeco. Mr. Sanford graduated in 1950 from U. of Alabama. Was born in Mountain Home, Ark. He has been representing Gaslin-Birmingham out of Birmingham, Ala., past two years.

CZ and UB Had Big Groups

DR. WALTER HOLZER, now assistant to manufacturing v. p. **REED HUNT** of Crown Z, told friends he has a new home in Hillsborough, Calif., below San Francisco on peninsula. But a daughter remained with friends in Camas, Wash., to finish high school there . . . **HAROLD ZELLERBACH**, exec. v. p., and three v. p.'s, **GABE TICOULAT**, **AL LAYTON** and **G. E. YOUNG**, led ten Crown Z execs from Coast. Half dozen easterners also on hand including Mgr. **HERB WYMORE** of Carthage mill . . .

Union Bag was one of best represented companies, with 25 men from Savannah mill alone, led by Vice Pres. **TAD DUNN** . . . On hand to cheer 1953 Gold Medal award to **GUNNAR NICHOLSON**, exec. v. p. and ex-Savannah manager. His ac-



TEACHER AND ROAMING PUPILS

EUGENE E. RODABAUGH (left), Pulping Technologist for N.Y. & Penn Co., and **NEIL ROBERTSON** (right), Mill Mgr., West Tacoma (Wash.) Newsprint Co., admit their debts to man in the middle—**KEN CHESLEY**, Research Director for Crossett Cos. 15 years. They were together at Crossett in Arkansas 12 years ago—and met again at Paper Week.

ceptance speech advocated more technical work in woods . . .

MORT COOPER, now manager of gear sales for Westinghouse, got lonesome for old friends and came back with his debonair successor as manager of the general mills section, **C. P. WALKER** . . . they reported **K. M. (PAT) PATTERSON**, who is overall industrial sales manager for Westinghouse, is doing his part in company's recent policy of having key men swap jobs for a few months, going to Atlanta to fill **AL ROSE**'s regional seat of authority. Al is in East Pittsburgh at Pat's desk . . .

HAROLD INGRAHAM, Chas. T. Main Inc., Boston, telling friends how—during his speech at Tappi section in Wisconsin Rapids, in which he warned against inadequate power for loads—all city's lights went out! He finished talk without notes in dark . . .

GEORGE BALKO, formerly Hudson Pulp & Paper mill mgr., now back on Canadian stamping ground, with Richmond P & P in Quebec . . .



NEW GROUNDWOOD SUPTS. IN SOUTHERN MILLS

JAMES MOYNIHAN (left), new Groundwood Supt. for Bowaters Southern Corp., Calhoun, Tenn. Held similar post at Coosa River. Formerly Groundwood Supt. at Bowaters Newfoundland and Southland.

R. C. HAGERMAN (right), new Groundwood Mill Supt. at Champion Paper & Fibre Co.'s Pasadena, Texas, Mill. He previously was Asst. Supt.

ROLLAND H. BRADFORD, home is Evanston, Ill., and head of Ebasco Services in Chicago, spent most of his time at Waldorf . . . "**GOB**" **DES MARAIS**, from Tacoma for Pennsalt, contacted old Dartmouth and New England friends . . .

Bigger, Better Graphic Panels

EDGAR ANDREWS of Minneapolis-Honeywell, reported bigger and better graphic panels to come . . . **ED GAYNER**, v. p. and manager of Brunswick Pulp & Paper, came down to 42nd for some technical info . . .

LARS O. HAEGER, whose father is president of Lilla Edet Paper Mills, 25 miles north of Gothenberg, Sweden, was an eager learner at sessions. He has been working in Washington state and Wisconsin mills and woods. His pater's mill has installed a new 144 in. Beloit Yankee Fourdrinier tissue machine, its fourth . . . another man in a new role—**WILLIAM L. GILLESPIE**, new manager for Hooker in Chicago, succeeding **CHARLEY CAIN**, who was saying goodbyes before going into selling to plastics industry . . . an ex-reporter of Paper Week was **EARL MCGINN**, now with Sandoz Chemical . . . Uncle and nephew and friendly rivals were **ELMER MACKLEM** of Beloit and **WARREN MACKLEM** of Black-Clawson . . .

In Tappi registration, 18 Smiths led all other names by a wide margin, with Davises, Joneses and Taylors next—9 each . . .

CHESLEY YOUNG, promoted to charge of formulated adhesives sales for Swift & Co., reported increasing places for use of colloidal glues in mills . . . **GEORGE CARLETON**, president of Detroit Sulphite Pulp & Paper, with **DR. ROY DAVIS**, his



Handles MORE Horsepower... the new U. S. ROYAL SUPER-SERVICE BELT

Meet the *toughest* V-belt in the "U. S." Line. Delivering 40% more horsepower than standard belts, it also absorbs greater shock loads. Ideal where space is limited or where you want to decrease the number of belts required in order to use stock sheaves.

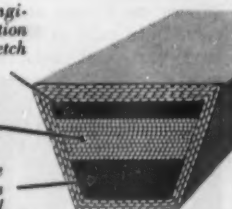
U.S. Royal® Super-Service is a "natural" for troublesome drives, especially heavy shock-load drives. High tensile strength, minimum stretch. All standard multiple sizes. Order from your distributor, or call any of United

States Rubber Company's 25 District Sales Offices or write to address below.

Top rubber cushion in closely engineered balance with the lower section ... to keep cool under constant stretch and return.

Equa-Tensil Cord Section— all cords scientifically placed, each pulling its share of the load.

A sturdy level cushion for the Equa-Tensil Cord Section provides structural firmness for V-grooves and over the flat pulley of V-to-flat drives.



A COMPLETE DRIVE SERVICE

MULTIPLE V-BELTS • F. H. P. V-BELTS • SHEAVES
FLAT BELTS AND BELTING • SPECIAL PURPOSE BELTS



UNITED STATES RUBBER COMPANY
MECHANICAL GOODS DIVISION • ROCKEFELLER CENTER, NEW YORK 20, N. Y.

Hose • Belting • Expansion Joints • Rubber-to-metal Products • Oil Field Specialties • Plastic Pipe and Fittings • Grinding Wheels • Packings • Tapes
Molded and Extruded Rubber and Plastic Products • Protective Linings and Coatings • Conductive Rubber • Adhesives • Roll Coverings • Mats and Matting

"U. S." Research perfects it.
"U. S." Production builds it.
U. S. Industry depends on it.

PAPER WEEK Personals

v. p. and several others, reported progress on their modern power plant . . . **AL GRAEF** made his Gotham bow as new tech. director of the Weyerhaeuser sulfite mill in Everett, where he succeeded **JOHN MCEWEN**, who went over to the new kraft mill there . . .

JIM HARRISON, tech director at Michigan Carton, didn't try to keep up with her but his wife, **TISH**, probably set record for catching good shows . . . **JOE HOOLIHAN** from Port Huron, was on lookout for old Thilmany pals . . . **HERMAN JOACHIM**, formerly from Los Angeles, with his own engineering firm now . . . **DR. J. L. McCARTHY** from U. of Washington and **J. H. McCARTHY**, chief engineer of St. Regis, are friends, but aren't related . . .

Bill Hendersons Had Added Duty

W. W. (BILL) HENDERSON and his wife, from Pensacola, Fla., (he represents Earl Paint, DeZurik, E. D. Jones, Wisconsin Wire and others) had another objective—seeing newest of nine grandchildren, baby **Emeline Hollister** (named for **MRS. BILL HENDERSON**) at Utica, N. Y. Father **DICK HENDERSON** is working at Earl Paint plant . . . **ROBERT I. THIEME**, plant manager of Scott Paper Co.'s NH3-base sulfite pulp mill at Anacortes, Wash., had chance to see son, **Bill**, freshman at Yale . . . **WALTER LAWRENCE**, now with **ERNEST ERICKSON** in Pulp Sales Corp., selling Finnish pulp, saw former pulp sales friends from Chicago. His home is 71 Ridge Road, New Rochelle, N. Y. . . . **VERNON B. BODENHEIMER**, chemical engineer on Riegel staff when it built new pulp mill at Riegelwood, N. C., came to first convention in new



JUST LONESOME FOR OLD PALS

MORT COOPER (left), who now is Manager of all Gear Sales for Westinghouse Corp., came back to Paper Week to see many old friends with his successor as Manager of General Mills Section of Industrial Department, **C. P. WALKER** (right). Mr. Walker oversees service and sales in pulp and paper. A Southerner, his early career in Westinghouse was in serving some paper mills in the Carolinas.

role as Southeast man for Stebbins. Base is 2007 No. 11th St., Pensacola.

. . . **BILL EARLY**, Notre Dame assistant football coach and Irish star of '40s, sells for Schwartz Paper, Chicago, out of South Bend, Ind.

AL BLAKE, vice president in charge of sales, from Metuchin, N. J., **DR. C. J. ALBERT**, tech. director from the McIntyre, Ga., clay operations, and **OLIN CALLIGHAN**, senior salesman from Kalamazoo, converged for Edgar Bros. Told of progress on Georgia plant expansion . . . proudly displayed in **BLACK-CLAWSON** hospitality room was blown-up framed letter praising fast, smooth startup of new machine at Manchester Board & Paper in Richmond, Va. . . . **JAMES E. AYERS** and **ROBERT D. BROWN**, busy building a small but still not widely known pulp and paper curriculum at U. of Alabama, at Biltmore . . . **DEAN BALKEMA**, new technical director for Price & Pierce in New York, came out of Far West pulp industry . . . **CLAUDE BEE-MAN** and **BRUCE ARMSTRONG** enthused over successful use of the Jackson & Church Zenith screw presses in groundwood bleach plants.

Blows Hot and Cold for Bill

BILL McNALLY, "Mr. Pulp and Paper" for Link-Belt Co., Chicago, told of landing in Seattle in 8 ft. of snow, where winters are usually mild, then hitting International Falls, Minn. (one of icebox towns of industry) in warm weather. **LESLIE L. LARSON**, technical director of Fernstrom Div., Potlatch Forests, Pomona, Calif., swung through his old hometown of Moscow, Idaho, on his way to Manhattan. He was born in Preston, Ida. . . . **BILL GREENE**, head of own N. Y. equipment firm, comes north with Mrs. Greene from winter home in Naples, Fla., for a week each month for 4 months. Attends Montreal and N. Y. meetings and Stowe-Woodward meeting and makes one more trip . . . **J. O. BURTON**, research manager for M & O in International Falls, spent ten years in Washington, D. C. with Bureau of Standards and Navy research after graduating from U. of Maryland . . . after his hitch in Washington, D. C., as forest products division chief, N. Y. was a break before returning to Chillingworth, O. post as assistant to Vice President **GEORGE PRINGLE** for **JOHN DAVIS** . . .

AUSTIN P. STORY, president of Chillicothe Paper Co., brought news of tremendous impact on employment and property of big atomic commission construction in that area



NEW SUPTS. IN SOUTH AT BOWATER AND COOSA

WALTER BUSHEY (left) named Groundwood Supt. at Coosa River Newsprint Co., Coosa Pines, Ala. He succeeded **J. W. Moynihan**, who resigned to join Bowaters Southern. Mr. Bushey was with Kimberly-Clark Corp. and came to Coosa River in 1949. He has been with the two companies 29 years.

OTHA WINNINGHAM (right) is new Maintenance Supt. of Bowaters Southern Paper Corp., Calhoun, Tenn. He formerly was with National Container Corp. at Jacksonville, Fla.

of Ohio . . . **RICHARD AHRENS**, of Appleton, Impco's representative in the Lake States, reported his son, **Dick W.**, eldest of five children, took honors in the six months air corps course in Texas following graduation last June from Bowdoin . . .

JOE WALTER, project engineer for Buckeye Cellulose, Cincinnati, on construction of dissolving woodpulp mill in Foley, Fla., and his wife are successfully publishing little community newspaper as hobby in their suburban home, according to associates who came to New York. Joe is now associate head of process equipment development for Proctor

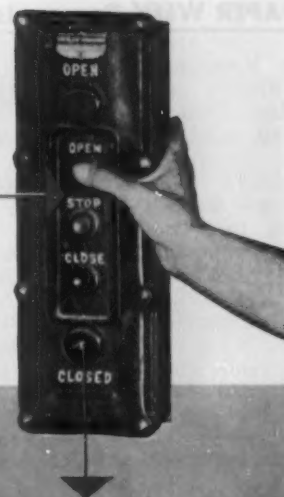
About 2 Ratliffs and 2 Lundbergs

FRANCIS T. RATLIFF, research department, Personal Products, Milltown, N. J., user of high alpha woodpulp, looked up Gaylord associates of brother **COOPER RATLIFF**, technical assistant in Bogalusa, La. . . .

Two **L. A. LUNDBERGS** at meeting—one from American Cyanamid, co-author of paper on sizing, the other the son of **H. A. LUNDBERG**, who helped build big Pacific Coast mills. Both young men are "LEN," too. The latter, Lennart Lundberg, Seattle, returned with wife from year in Sweden, brought home their first child . . .

JACK R. AYERS, Lake States representative for E. D. Jones & Sons, sold home in Pittsfield, Mass., moves with wife and daughter, **Bobbie**, to Appleton, Wis., May 1. Jack joined Jones in 1945 after 15 years with Smith Paper (now Schweitzer-owned), once bought straw for them

easy way to blow down pulp digesters



Press a button. That's all there is to it.

You don't even have to go down to the discharge floor; the button can be conveniently located right on the operating level.

That's one of several reasons why Yarway Remote-Controlled, Motor-Operated, Digester Blow Valves have become standard equipment on pulp digesters in many leading plants—names on request.

One of eight Yarway Digester Blow Valves installed at a Canadian paper mill.



OTHER REASONS:

1. The famous Yarway non-clog *seatless* operating principle that assures tightness and effectively seals off the digester, preventing loss of black liquor and increasing the number of cooks per day.
2. Yarway's rugged construction withstands severe shock.
3. Yarway's modern metallurgy withstands severe chemical action.
4. Fast operation results from motor control and self-cleaning free discharge.

If you are interested in increased production, low maintenance, savings in labor—then you're interested in Yarway Digester Blow Valves. Write for full description and specifications in Yarway Bulletin B-440.

YARNALL-WARING COMPANY

103 Mermaid Ave., Phila. 18, Pa. • Branch offices in Principal Cities

YARWAY

PAPER WEEK Personals

in Minnesota . . . **NEILS JULE LARSEN**, of Great Barrington, Mass., Albany Felt reps in New England, was back from trip to Mexico . . .

EDGAR (JERRY) BOYCE of DuPont's Grasselli division, Wilmington, Del., told of confusion when three Boyces called at once on Southern mill. Others were his brother, **BILL BOYCE**, of American Cyanamid Calco div., Chicago, and **MAX BOYCE**, no relation, of DuPont dyestuff div., Philly . . .

ED GARRISON, retiring this year as Pacific Northwest manager for Cyanamid, who has caught many a big salmon, reported poorest fishing season ever last year . . .

GUY E. SANFORD, 1950 chem. eng. graduate of Univ. of Alabama, resident of Birmingham, Ala., is new rep. for Improved Machinery Inc. Born in Mountain Home, Ark., he is married and has 4 yr. old daughter. Recently represented Gosselin-Birmingham to paper mills . . .

Other Party Moments

TOM BUSCH, I.P.'s woodlands exec in South, re-lived his performance as a ventriloquist's dummy at last year's APA annual dinner . . . Memorable moment—viewing American Cyanamid's TV show on paper in Fraser Paper's suite at Waldorf with Fraser men **ED COWLING**, **CHAS. GRANT**, **JACK CRYAN** and wife, **CHUCK RICE**, **LOGAN MILLER**, **JACK BARRY** and **BOB O'NEILL** . . . **ROY NEUBRECH**, Forest Products Division's "iron man" in Washington, and **JIM WIST**, Kalamazoo Paper, had ringside seats to same show . . . Good voice at Perkins-Goodwin party by **BILL JACOBI**, Union Bag . . . **KEN TROWBRIDGE**, North Carolina Pulp, enhanced his standing as a story-teller at APA banquet . . . **FLOYD CROCKER**, St. Regis, Bucksport, Me., pleased to see feature story on his island logging operations in March **PULP & PAPER**—He showed a P&P editor how Maine lobsters are caught—and "et" . . . **JOHN CALKIN**, pulp and paper consultant and Foster D. Snell specialist, and **GEORGE ALJIAN**, C&H Sugar, met at Commodore. Mr. Aljian coordinates by-products project of Hawaiian Sugar industry . . . **ALBERT ERNEST**, vice pres., woodlands, for St. Regis in South, easily spotted in his wide-brimmed hat . . . **BOB PLUMMER**, Rayonier, recalled some long-ago experiences with an editor at Pulp Consumers' reception . . . **ED THOM**, interested

in selling some of Howard Smith's pulp . . . **JOHN McDONALD**, Brown Co., pleased that Solka Floc is publicized as filter medium in L-M cigarettes . . . Veddly busy room at Commodore was Hygrotester's where **WILLY RAU**, **H. A. BRENNER** and **K. H. EMICH** were pleased by reception given their German-manufactured moisture measuring and regulating equipment . . . Genial hosts at Commodore were **GEORGE RITTENHOUSE** and **FRED LUCKENBACH**, of Virginia Smelting . . . **D. E. HESS**, Glatfelter Pulp Wood Co. chieftain, pretended disappointment at our failure to produce a pix of King and Queen of Greece from a Washington forestry meeting . . .

Community Program Like Measles—Bergstrom

NATHAN BERGSTROM, president of Bergstrom Paper and one of the founders and former chairman of the APPA Community Relations Committee, told a Paper Week forum that this unique industry wide program "if properly handled, makes for better labor relations."

He said: "Many non-participating mills will eventually join. Some will never join—but as in an epidemic of measles, they will carry on some form of community relations."

Dwight Thomson, Champion v. p. and present chairman, and **Don Rochester**, secretary of the APPA overall committee, organized an open forum held in the Waldorf. **PULP & PAPER** carried a report in Feb. issue (p. 40) on how this unique program of American industry is now organized in 11 regions in the U.S., embracing a total of 974 mills.

A great part of the discussion at this meeting centered around International Paper Co.'s waste utilization program at its Springhill, La., mill, and the beneficial results accruing to that company in its relations with the people and officials of that state.

Col. Eddie Y. Argo, manager of the Shreveport, La., office of International Paper, told how cattle and crops were successfully raised on mill black water, and how fish thrived and multiplied in a managed pond, immediately after a black-water storage period there.

Pictures and complete reports on this I.P. liquor impounding and utilization program were published in the Jan. 1954 issue of **PULP & PAPER** (p. 36-38).

See pages 86-88, 96-110 for reports on Tappi technical programs



GE'S GEO. KNAPP PROMOTED; OHIO MAN FOR CYANAMID

GEORGE KNAPP (left), former Mgr. of Paper and Textile Engineering for General Electric, has been promoted to Mgr. of Engineering Practices, under F. M. Roberts, Mgr. of Industrial Engineering, Schenectady, N. Y. Mr. Knapp joined GE in 1936 from nearby Rensselaer Polytech and has been active in pulp and paper industry engineering since 1939. His successor is C. J. Meloun.

ROBERT S. LIJESTRAND (right), whose appointment as new Ohio District rep. for American Cyanamid paper chemicals sales is announced by George E. Fromm, Chicago, Western Regional Mgr. for the Dept. Bob Liljestrand was 10 years with Waldorf Paper Products Co., St. Paul, Minn., as Chemist and finally Supt. He joined Cyanamid in 1953. Graduate of Hamline U., '37, he was 6 years at Woods Hole, Mass., Marine Biological Labs.

A Talk on Germany—May Build Mills Abroad

THE WEST GERMAN ECONOMY is "one of the soundest in Europe today and it is the nearest approach to a free enterprise economy"—this was a highlight of the address made by **Reuben B. Robertson, Jr.**, in the open industry session in his new role as first vice president of APPA. (Which means he may, in a couple of years, succeed to the highest position in the association which his father held six years ago.)

Mr. Robertson, president of Champion, visited West Germany last year as head of a group sent by the U. S. Government. He confirmed other reports from travelers of the fast recovery of that country.

In this connection, **PULP & PAPER** has learned reliably that Zellstofffabrik Waldhof, of West Germany and one of the world's most progressive and successful pulp and paper companies, has had "invitations" to co-operate in building and operating mills in Southern U.S., Canada, Brazil, India and the Ivory Coast of Africa.

Mr. Robertson favored truly reciprocal multilateral treaties as a U.S. trade policy. He declared himself against any Taft-Hartley changes that would permit the closed shop; secondary boycotts, jurisdictional strikes and forced union membership.

**IN YOUR "SAVE ALL"...
profitable recovery,
clearer effluents with
NEW PROCESS GLUE**



**... make your "SAVE-ALL" really save —
in stock, water, time, labor and money.**

Savings obtained through efficiency in your flotation-type "SAVE-ALL" are the kind that pay off fast, and pay off *big* because they cost you so little to realize . . . less than a cent per thousand gallons of treated water.

Swift's New Process Glue is a superior non-foaming flocculent. Used in your "SAVE-ALL", its unique colloidal action can be quickly noticed in clearer effluents. Its unusual flocking ability helps promote highest recovery of fibers and fillers.

Try Swift's New Process Glue in your "SAVE-ALL" . . . or see how it can be used for high retention of valuable clay and titanium. An informative bulletin outlining formulas, equipment and instructions for these and other uses is available to you without obligation.

Write for details and remember . . .

ONE TRIAL IS BETTER THAN A THOUSAND CLAIMS

**DON'T OVERLOOK THESE
OTHER IMPORTANT USES FOR
NEW PROCESS GLUE**

- For creping of facial and toilet tissues and paper napkins.
- For high retention of clay and titanium.
- For machine coating.
- For paper that requires high Pick test.



**Another of Swift's
Products for Industry**

USE THIS COUPON FOR FURTHER INFORMATION

Swift & Company
Adhesive Products Department
Chicago 9, Illinois

Please send your latest bulletin on Swift's New Process Glue.

Name of Company _____

Address _____

City _____ Zone _____ State _____

Your Name and Position _____

PAPER WEEK REPORTS

Prof. Jenness Surprise Recipient of Maine Award

Popular Prof. Lyle C. Jenness has received the University of Maine Pulp and Paper Foundation's Honor Award for 1954.

A surprise presentation was made by J. L. Ober, president of the foundation and vice president of Scott Paper, at a luncheon of 150 Maine alumni and guests at the Biltmore during Paper Week.

The award was "in recognition of his many years of faithful teaching and fruitful research in pulp and paper technology."

Prof. Jenness attributed what progress the university had made to "a sympathetic and understanding administration at the university; a capable and resourceful staff of teachers; and unselfish and constructive support from the alumni and others who have the welfare of the industry at heart."

Dr. Ashley S. Campbell, dean of the College of Technology at the university, introduced by Fred Herbolzheimer, Jr., chairman and technical director, Marinette Paper Co., discussed "what's new at the university." Improvements include a new men's dormitory, a men's cafeteria and "more attention to the social life of the students." According to Dr. Campbell, the newest thing in education is to know more about the student's personality.

Stream Improvement Meet Draws Many Top Execs

George E. Dyke, Gair president and chairman of governors of the National Council for Stream Improvement, made a significant prediction at that group's meetings Paper Week—he indicated more ample water supplies would be available for many mills in the future and this would reduce the effluent problem proportionately.

One of the most significant things about the day-long program and "workshop" discussions organized by Dr. Harry Gehm and Russ Winget of the Council was the considerable number of company presidents and top executives seen in attendance.

Executives from Riegel Paper Corp. and American Cyanamid Co. discuss TV presentation of "Life With Paper" which Cyanamid presented on TV-ABC Feb. 17. Left to Right: W. H. Stauffenberg, American Cyanamid; P. T. Jackson, Dr. A. L. M. Bixler, R. W. Flores, all of Riegel; H. Wohlers and Ralph Kumler of Cyanamid.

Government Drama at Paper Week

Big government drama behind the scenes at Paper Week:

Clarence E. Manion, who headed the Eisenhower Commission on Inter-Governmental Relations, addressed the Salesmen's annual luncheon.

Sherman Adams, assistant to President Eisenhower, addressed APPA's annual dinner.

A few hours before Mr. Adams arrived at the dinner, he fired Dr. Manion. When Mr. Adams reached the Waldorf, he declined to comment on his action.

Mr. Adams speech was an attack on what he called the Roosevelt-Truman era of "decline in honesty, spies, subversives and low grade public servants."

Dr. Manion's speech was an attack on too-great concentration of "centralized government power." He combined it with an attack on "Communist despotism and limitless concentrated power."

In the job he abruptly lost during Paper Week, Dr. Manion had been charged with re-examining federal grants-in-aid to states, totalling over \$2,000,000 annually.

Dr. Manion said he was fired because he had come out for the Bricker amendment to curtail presidential powers.

But a White House source said he was too slow in turning in his commission's report, and compared fast action of the Randall Tariffs Commission, which reported Jan. 23—long before the Mar. 1 deadline for both.

Attendance Figures For 1954 Paper Week

PULP & PAPER gathered these attendance figures at 1954 Paper Week:

At Waldorf sessions of management and salesmen, probably a round total near 1700. Little off some past years as sales activity was quieter. There is no registration there. But the Salesmen's luncheon draws them all virtually and some extras—it totalled 1,765. There were 900 at the \$20-a-plate dinner to hear the assistant to the president, Gov. Sherman Adams.

For Tappi's sessions a new record registration—2,074. About 1700 attended the luncheon.

Mid-Manhattan does a good job handling near 4,000 paper people every year. But consider its auto show, that draws 190,000! The photographic trade show, that draws 70,000!

John Walsh of Cyanamid Tells What That Tiny Machine Can Do

JOHN M. WALSH, general manager of the paper chemicals department, American Cyanamid Co., New York, told PULP & PAPER that the little 9-in. German paper machine, which literally thousands of people viewed in the Commodore lobby during New York Paper Week, is an excellent performer.

Cyanamid had the machine at its Stamford, Conn., laboratories for a couple of weeks and ran tests with Cyanamid Melamine resins, rosin sizes, etc. It produced a nicely formed sheet, said Mr. Walsh, and it could duplicate nearly all the variables of a commercial operation.

The practical aspects of the tiny machine is that for low cost it can

provide paper mills with the means for matching color or quality of specific orders or even develop entirely new furnishes. Cyanamid does not own the machine but borrowed it from the importers, Parsons & Whittemore, Inc., New York.

P & W, sales agents, have the machine in their New York sales office.

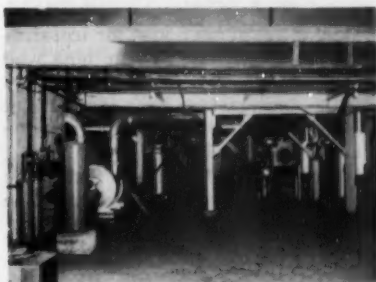
Mr. Walsh pointed out that one man can operate it, and that it does not require firing up a boiler to operate. It is heated by gas and the drives and vacuum are immediately put in operation by electricity. It runs at 8 fmp. It makes 3½ lbs. of paper per hr., requiring very little furnish.



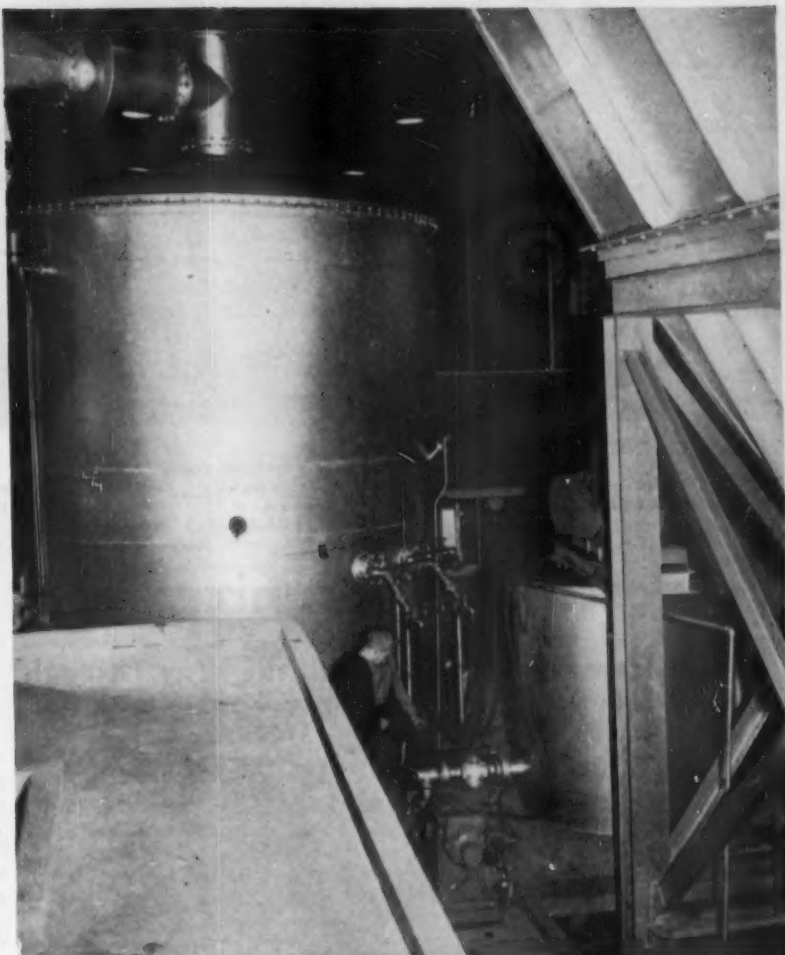
ACID Requirements of Sulfite Pulp Mill are met with Dorrco FluoSolids System

PORT ARTHUR, ONTARIO —

At the Thunder Bay Mill of Abitibi Power & Paper Company, Ltd., a Dorrco FluoSolids System has been on stream since June, 1953 producing SO_2 gas from pyrite. The System at the present time is roasting 20 tons per day of pyrite to supply the entire sulfur requirements of this sulfite pulp mill. Up to 14% SO_2 gas is produced which passes through a two-stage cyclone system followed by a cooling scrubbing tower before going to the acid towers. An interesting feature of this installation is the use



Bottom floor of Reactor building showing blower at left and cyclone quench tanks at right. Reactor windbox is visible at right center.



Closeup of Dorrco FluoSolids Reactor at Port Arthur showing slurry storage tank and dual feeding arrangement.

of a heat-exchanger in conjunction with the scrubber. By recycling scrubber water, loss of dissolved SO_2 is minimized and at the same time waste heat recovery is effected.

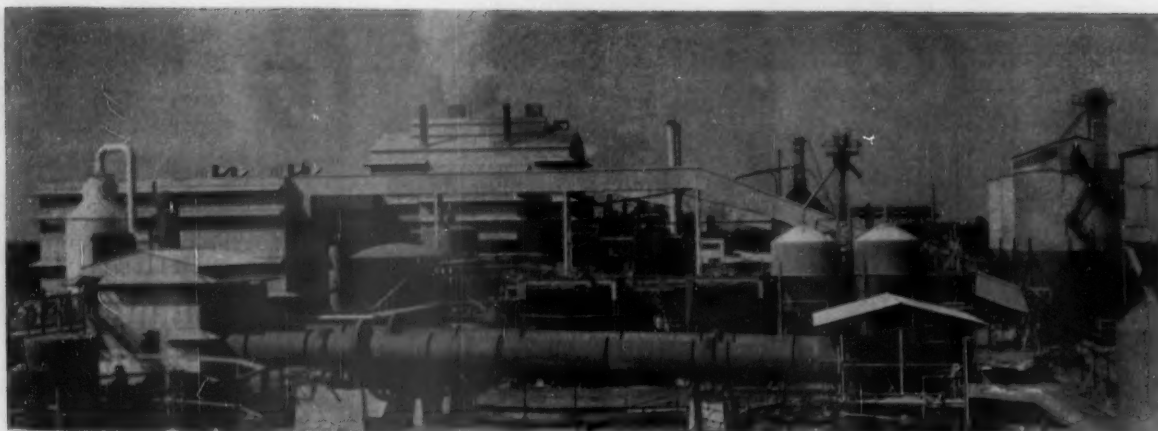
In addition to this installation at Abitibi's Thunder Bay Mill, seven more FluoSolids Systems in the U. S., Canada and Norway are either in operation or under construction in sulfite pulp mills for the production of SO_2 for cooking liquor. Fourteen more are in operation or being installed to produce SO_2 from pyrite, zinc and low grade sulfur ores at acid plants, which will produce close to a million tons per year of H_2SO_4 . This impressive record results di-

rectly from the fact that the FluoSolids process can deliver an SO_2 gas at lower investment and operating costs than conventional roasters and provides users with an economically feasible and reliable source of SO_2 despite fluctuations in natural sulfur supply.

If you would like more information on FluoSolids — the most significant advance in roasting technique in the last 30 years — write The Dorr Company, Stamford, Conn., or in Canada, The Dorr Company, 26 St. Clair Avenue East, Toronto 5.

*FluoSolids is a trademark of The Dorr Company, Reg. U.S. Pat. Off.





TREND IN SOUTH IS TO MULTIPLE KILNS

VIEW OF NATIONAL CONTAINER'S new Valdosta mill from atop cooling tower shows Allis Chalmers Mfg. Co. dual lime kiln installation at

center, wood preparation and chip piles at right. Blow tank and heat recovery tank are to left.

Valdosta Is Mechanized and Interlocked

New Features Found all the Way Through this National Container Corp. Operation

A SMART NEW MILL, compact yet not crowded in working space, of low invested capital per ton capacity but with latest proven equipment, is in operation at Valdosta, Ga. This newest division of National Container Corp. put first paper on the reel Feb. 2.

While much of the equipment has been proven in recent years, there are innovations in almost every mill department.

All of the mill is mechanized for automatic instrument control; all interlocked. In this respect it can be compared favorably with any in the industry.

Compactness of the mill, with virtually all process and operating departments in the main or abutting structures, permits contact without going outside and facilitates maintenance. Excellence in arrangement of equipment facilitates operation.

The pulp mill has brown stock washing and refining, valveless deckers, high-density storage. The paper mill has a new headbox stock level control, high speed press with high pressure dryers and auxiliaries to match, primary and secondary headboxes, and what is described as a "finest in the South" Ross air system.

Lime recovery presents several unusual features. Water supply installations are modern.

Many ideas of the experienced company management, under William T. Webster, vice president and

mill divisions general manager, went into the project. J. R. Aitken, of Merritt-Chapman & Scott Corp., served as designer, with his company performing the engineering, procurement and construction tasks. It could be called a "turn key" job if paper mills had front door locks.

Process instrumentation is by Minneapolis-Honeywell Regulator Co., and combustion control instruments came from Bailey Meter Co. In every department there is to be found the familiar instrument panel installation that signifies operator control from a central station. Westinghouse supplied electrical equipment including turbo-generators, switch gear and machine drive.

Construction is suitable to the climate, without excessive heaviness. Mill exterior of Johns-Manville corrugated Transite is heat resistant and contributes to inside temperature control. There is no steel sash since plastic glass is used entirely. While the use of Transite contributes to a low per ton mill cost, it need not be considered as lowering standards nor was there any pinching or scrimping in any other direction.

The mill extends 838 ft. 4 in. from the extreme eastern wall of the digester building to the west wall of the warehouse. Of this distance 24 ft. is in the digester house, 106 ft. 1 in. in the pulp mill, 600 ft. in the paper mill. The paper mill extends 18 ft. into the otherwise 125-ft. 11-

in. deep warehouse structure. Both pulp mill and paper mill are 76 ft. 6 in. wide. The digester house projects southward 31 ft. 11 in. but otherwise the south wall presents an unbroken line.

High-density stock storage, foam, and two liquor tanks adjoin the pulp mill to the north. Beyond them are the evaporators. Next west of the tanks and adjoining the pulp mill are the recovery building and turbine room, in succession. Power boilers abut turbine room to the north.

The warehouse extends 220 ft. north from the south line of the mill, ending at the 372-ft.-long train shed, which extends east and west. East and adjoining the warehouse and north of the paper mill an abutting two story building houses a storeroom on the ground floor, a completely equipped machine shop is above. On eastern front of machine shop are the air-conditioned mill offices.

Two rail tracks extend through the train shed, terminating at the power boilers. Here, on the north side, is the pump house for transferring fuel oil to the storage tank well south of the mill, and also the Hercules automatic resin emulsifier housing. A third track north of the train shed serves the salt cake silo, continuing eastward to reach the water plant and intervening lime recovery installation.

Woodyard and Preparation

Pulpwood yard is north of the train shed, well removed from the mill. Wood is unloaded by either of

two Northwest Engineering Co. Model 95 crawler tractor cranes equipped with Owen No. 105 RC and 625 RD pulpwood grapples. Wood is unloaded to reserve or to conveyor, or from reserve to conveyor. Conveyor feeding is through a loading hopper that reduces shock. Conveyor, furnished by Jervis B. Webb Co., is equipped with Stephens-Adamson MP-23 ball bearing carriers for the cylindrical rollers.

New for that far down South is the 26-in.-wide, 900-ft.-long Goodyear Tire & Rubber Co. belt that receives pulpwood and moves it to a 40-ft.-high head pulley for discharge to barkers without transfer. This belt conveyor has a designed capacity of 1000 cords per day. Its upward arc on a 720-ft. radius provides an elevation of 24 ft. above a roadway, allowing passage of the cranes to the mill. Yard operating pulpwood capacity is 20,000 cords.

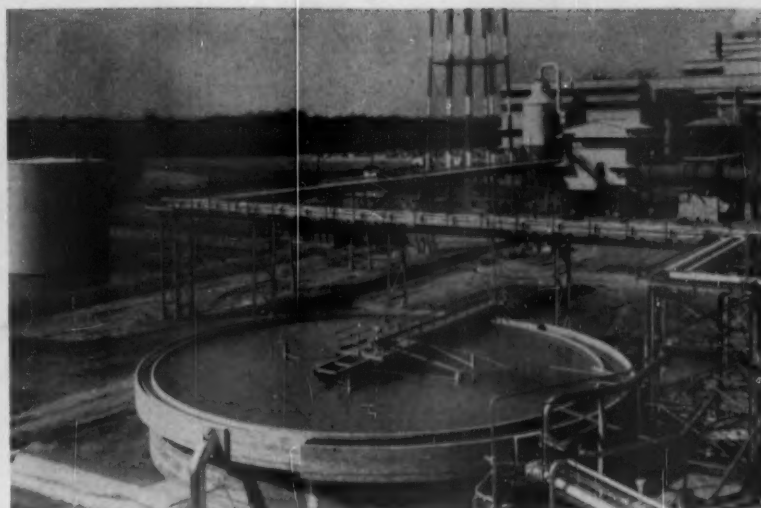
Two 12 by 45 ft. Carthage barkers discharge to two 6-ft.-wide Goodyear rubber belt sorting tables where over-size or otherwise undesirable pieces are pulled for passage through a Carthage log splitter or Diamond rejects hog. Bark is submitted to a Williams Crusher & Pulverizer bark hog, and a Merrick Weightometer en route to bark boiler.

Sorting table belts move the wood to two Carthage 96-in. 10-knife chippers. For conditioning of chipper and hog knives, there is a 150-in. Hanchett Mfg. Co. knife grinder with a skilled machine operator in charge who maintains a "razor's edge" on these tools.

Pulp Mill Like Jacksonville

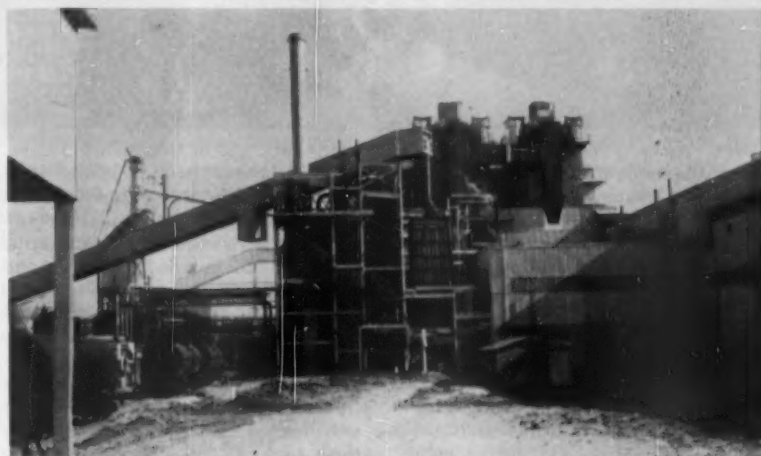
Chips are blown to a cyclone, thence carried via bucket elevator and conveyor to three 60,000 cu. ft. silos, or dropped by silo by-pass direct to conveyor to digesters. Feeding tables serve from the silos and a Merrick Weightometer is set beyond them. Tramp iron is picked up on conveyor above the digesters by an Eriez Mfg. Co. magnet. Chip silo capacity is equivalent to 24-hr. pulp mill operating capacity, and discharge rate over conveyor at 150 cords per hour is sufficient to load one of the 4500 cu. ft. digesters in 7 min.

The five 12 by 46 sulfate direct cook digesters, as well as all mill tanks, were furnished by Chicago Bridge. These digesters are rated among the largest in the industry. Each is equipped with a Yarnall-Waring 10-in. hydraulic blow valve. Blow steam recovery system was furnished by Swenson Evaporator



WATER HAS COCHRANE TREATMENT

VIEW OF COCHRANE 6300 gpm, 72-ft.-diameter process and water circulating treatment plant, with elevated pipe walkway. This installation is believed largest of its type in paper industry.



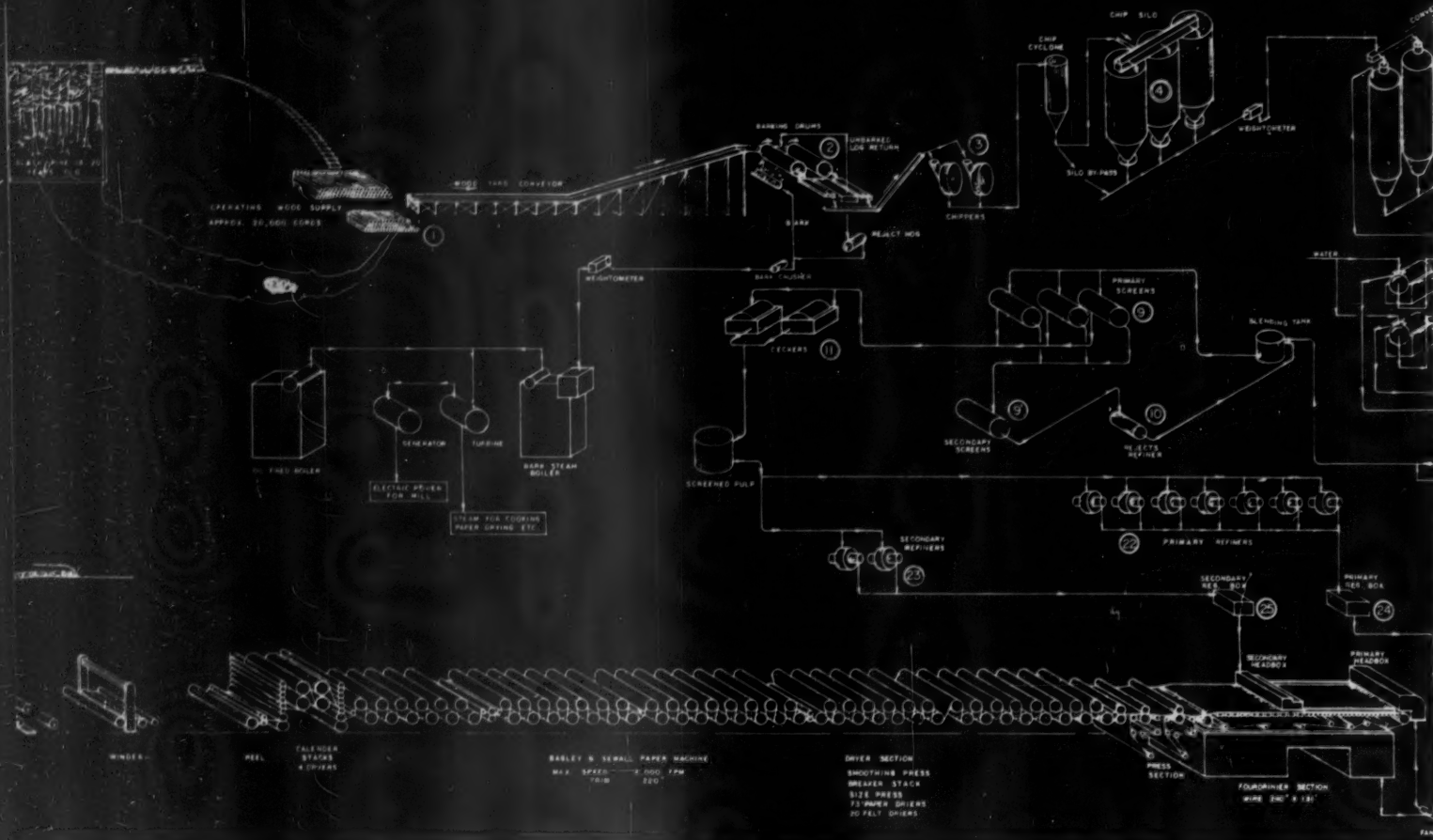
C.E. BOILERS ARE OUTDOOR TYPE

COMBUSTION ENGINEERING Co.'s power and recovery furnace installation loom towards sky. Fuel oil and chemical unloading spur tract at left.



NORTHWEST CRANE FEEDS BELT CONVEYOR

CAREFULLY PLANNED WOODYARD provides two Model 95 Northwest Engineering crawler cranes with Owen Bucket grapples that unload wood from rail carrier and feed Goodyear belt conveyor.



Div., Whiting Corp., with pumps from Ingersoll-Rand Co. Turpentine recovery system is from Foster-Wheeler.

The five sulfate digesters are equipped with the automatic liquor charging system whereby both liquors are fed simultaneously. This system is similar to that used at NCC's Jacksonville mill.

Complete instrument control for digesters and other operating functions of the pulp mill has been provided by Minneapolis-Honeywell Regulator Co. in a double panel installation that faces both ways, making a separation between digester operating floor and brown stock washers.

How Stock Is Washed and Screened

From blow tank, brown stock is sent by two lines to four Hermann Claflin refiners, supplied by Emerson Mfg. Co. Each pair is in parallel to the next lower floor. Stock moves up from these to two lines of 4-stage 8 by 16 ft. Improved Machinery brown stock washers. Each line of washers discharges to a 75-ton storage chest. Stock then is moved to a blending chest and then to three primary Montague Machine Cowan screens on a mezzanine floor in washer room. Rejects from the primary screens are sent to a fourth secondary screen, thence to a Sprout-Waldron dewatering screen and through a Sprout-Waldron re-

finer back to the secondary screen.

Both brown stock washing lines are equipped with hood and exhaust furnished by J. O. Ross Engineering Co. There are two exhaust units in each of the hoods. The hoods and exhaust outlets are made of asbestos panels with stainless steel bolts attaching the asbestos sheets to structural steel frames.

Stock accepted by the primary Cowan screens is sent to two Impco valveless deckers, and drops from them to a 125-ton storage chest immediately below. The deckers are in an adjoining building reached by

cat-walk from washer room and from recovery room direct.

This placement of stock below the deckers presents an unusual type of storage of stock. With the two 75-ton chests beneath the washers, the pulp mill storage capacity amounts to 275 tons of 14% consistency stock, or enough to supply the paper mill for a half-day. This is an unusually high quantity of stock behind a paper machine, and possible only through utilization of the high-density principle. All three high-density storage tanks are equipped with Impco removal systems.

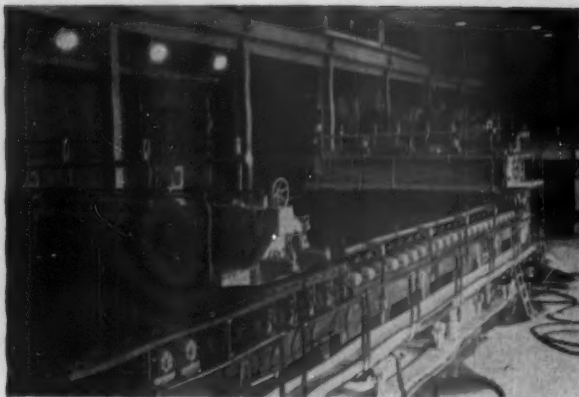
In Paper Mill, Are Improved Controls

A PRINCIPLE EXPRESSED in the new Valdosta mill is that high-density stock should be moved from storage beneath the deckers to the paper machine with as few intervening steps as possible. The arrangement is that stock is moved from chest to an Impco agitator type consistency control operated through Minneapolis-Honeywell instrumentation.

From there, stock is passed through a DeZurik consistency regulator for critical control and then to seven primary 48-in. Sutherland refiners. From these the stock is sent to a small (smaller than normal) machine chest. Actually designated as "regulatory" it serves much as a surge chest, with capacity equal to only about 30 min. machine run.

A special new type DeZurik control valve is placed between this chest and the 30,000 gpm Ingersoll-Rand fan serving the primary headbox. The arrangement for the machine's secondary head box is similar but scaled to an 8,000 gpm pump and two 48-in. Sutherland refiners engaged in that service.

Under older methods, a constant head on the fan pump is maintained by using a headbox with overflow going back to the machine chest, but this has a tendency to entrain air in the stock with resulting variation in basis weight. By using a new type DeZurik level control in the headbox (instead of overflow) and placing a precision DeZurik throttling valve ahead of the fan pump, it is



PAPER MACHINE FROM PRESS SECTION

VIEW OF BAGLEY & SEWALL paper machine's Fourdrinier. It is equipped with 240-in. by 130-ft.-long forming wire, and with Valley Iron primary and secondary headboxes.

The primary is designed so that the wire at the breast roll is fed by direct pump pressure through a stainless steel flow manifold distributing the stock to the receiving box of the inlet. Here it is spread laterally across the full width of the machine and immediately passes through a series of rotating stainless steel distributing rolls of graduated design enclosed in curved conduit leading to a substantially larger distributing roll of special design and hence through the nozzle of the inlet to the paper machine wire.

The upper portion of the nozzle is not only adjustable as to angularity with the wire but is both vertically and adjustably moved up and down the wire while the machine is making paper and similarly with the lower portion of the nozzle or the apron. All interior contours of the conduits are fully machined and lined with $\frac{1}{8}$ in. thick stainless steel and all internal portions of the equipment are of stainless steel.

The secondary unit, which delivers stock to the wire at the suction boxes, is of related design and similar fundamental theory but necessarily arranged so that all components are above the wire. Similar adjustability of component parts is provided.

Among the 47 rolls furnished for the paper machine by Stowe-Woodward, Inc., were table, wormed felt and wire guide rolls.

Almost two million cu. ft. of air per min. is handled in 21 supply and exhaust units installed by Ross Engineering Co. for cooling and heating the machine room. A Ross system is also in the turbine room.

The Ross machine hood is of standard panel open type with twelve 72-in. Axiflo exhaust fans serving stacks that vent through the roof. Two bottom felt supply units

are equipped with Silentvane fans and copper tube aluminum fin heaters. Air temperatures are controlled by valves located in heater steam supply lines. Two Ross-Grewin units with centrifugal compressors were designed for use with new streamlined nozzles. Nozzle location and drops complement the open type Bagley & Sewall front frame contour.

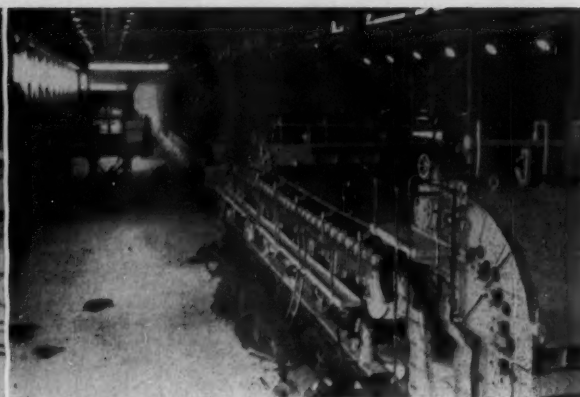
Calender cooling is effected with a directly coupled 50 hp. Planovane

UNUSUAL ARRANGEMENT AT DRY END

TWO BAGLEY & SEWALL calender stacks with four 60-in. dryer rolls (J. O. Ross Engineering hood) in between. Farrel Birmingham supplied the rolls.

fan. Vapors given off by the dryers between the calender stacks are handled by a separate hood from that for the machine. Filtered air is vented from two units to 18 sectional drive motors backside of the machine. Two ventilation control rooms (150 and 120 ft. long) are provided for wet and dry ends. From these, air supply is permitted to escape to the basement. Three units serve the machine room top.

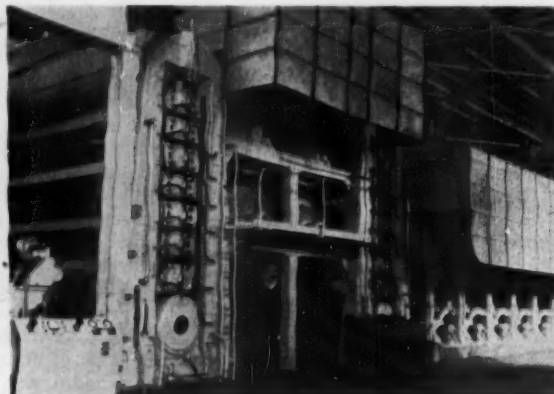
Automatic emulsification of rosin size for the paper mill is effected in one of the new Hercules units which is placed in a special small brick building entirely outside the mill structure. In the automatic process the paste rosin size flows



NOT ONE—BUT TWO HEADBOXES HERE

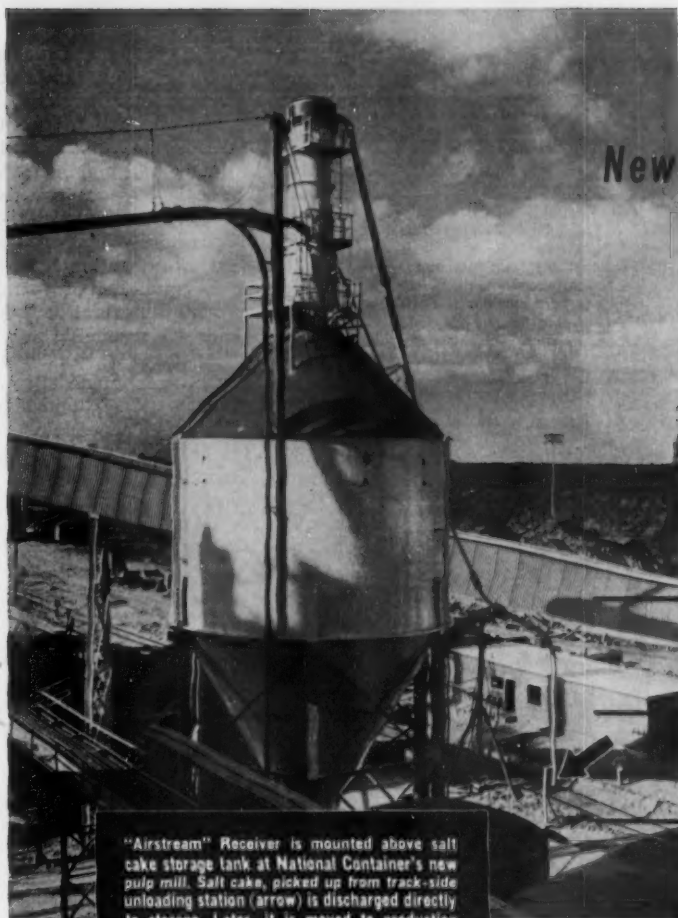
ANOTHER VIEW OF Bagley & Sewall 200-in. trim paper machine, also showing Valley Iron headboxes from another angle. Ross air system is described as without peer in the South.

from a storage tank into a heating tank which comprises the bulk of the unit. Here the temperature is brought to a predetermined value through use of an automatic regulating valve. From the heating tank an integrated piston type pump feeds the size to an ejector where it is combined through venturi sections with a stream of hot water with maximum mixing and homogenizing to form the primary emulsion. Further mixing is effected in



a turbine effect unit, a cylindrical chamber with spiral rotating baffle. The emulsion then flows to a small storage tank of four to six hour mill capacity where it is diluted to final concentration with cold water. Size emulsion is drawn from this storage as needed, with a float control device operating to stop or start the emulsifier by automatic action. The device requires a space of about 6 by 6 ft., and comes in a package unit.

Drainage and temperature controls for the fast, high pressure dryer rolls have been provided through a sectional, multiple unit installation furnished by Midwest-Fulton Co. Also Johnson joints with



"Airstream" Receiver is mounted above salt cake storage tank at National Container's new pulp mill. Salt cake, picked up from track-side unloading station (arrow) is discharged directly to storage. Later, it is moved to production through conveying line suspended from wires.

New National Container Plant
Relies on Dracco Airstream
for:

SWIFT SURE HANDLING OF SALT CAKE

Dracco's "Airstream" Conveying method is preferred again!

This time, "Airstream" has been put to work handling salt cake at National Container Corporation's new plant in Valdosta, Georgia. Large tonnages of salt cake (or sodium sulfate) are consumed daily at National's plant to make up the cooking liquors necessary for producing wood pulp.

The Dracco system performs two vital materials handling jobs—unloading to storage and transporting to process. Incoming box cars are emptied by one man from a track-side unloading station. All salt cake is moved directly to a 90-foot storage tank at 15 tons per hour without loss or contamination.

For daily production requirements, this versatile

Dracco installation also withdraws salt cake from storage and conveys it some 175 feet to a nearby plant. There, the salt cake is discharged directly to process tanks.

Highly automatic, this efficient handling system assures minimum labor costs and permits economical bulk purchasing. Designed and engineered by Dracco, it provides completely dependable, low-cost materials handling for National Container.

If your handling problem involves bulk granular or powdered materials, don't overlook the economy of an "Airstream" Conveyor. Write to:

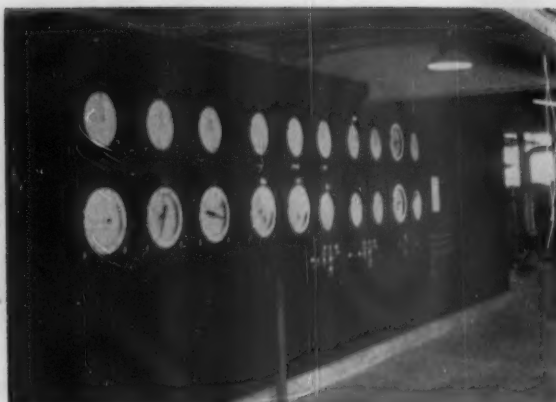
DRACCO CORPORATION
4063 East 116th Street • Cleveland 5, Ohio

The economies and advantages of the Dracco "Airstream" method are presented in Bulletin 529. A copy will be sent you on request.

DRACCO

Airstream CONVEYORS • DUST CONTROL EQUIPMENT

Performance Proved



DOUBLE PANELS SEPARATE DIGESTERS AND WASHERS

SINCE PROCESS INSTRUMENTATION of mill is entirely from Minneapolis-Honeywell, this view of panel on digester operating floor is only one of many.

compensators were supplied. Vacuum for the machine's water withdrawal units is provided by Nash Engineering Co. pumps, including the Hytor No. H-11-A size. The 74 by 72 in. broker beater was furnished by Black-Clawson.

Boilers Are Bark, Oil Fired

Steam for machine dryers is drawn through a reducing valve from 150 lb. extraction from one of the two turbo-generators. Both of these are of 7500 kw capacity but

one is a double extraction condensing and the other an exhaust unit. Combustion Engineering furnished one oil fired 150M#/hr. 800 F. power boiler; and one bark and/or oil fired 100M#/hr. 800 psi, 800 F. boiler. All of the boilers, including recovery furnaces, are equipped with Bailey instrumentation concentrated in modern panels for operator control. Both power boilers are of the unenclosed "outdoor" type. Boiler feed pumps were by Ingersoll-Rand.

Several "Firsts" In Chemical Plants

CHARACTERIZED by several innovations, the lime recovery system presents interesting phases from both operating and technical aspects. For one, the hot burned lime from the kilns is dispatched direct to the Dorrco causticizers, saving heat otherwise lost in storage; secondly, the causticizers are elevated, providing gravity flow to white liquor clarifier. The hot lime handling was adopted from the Jacksonville mill. The other is new. There are other new features.

From brown stock washers the weak black liquor is moved to storage tank, thence to two sets of Goslin-Birmingham sextuple vacuum self-supporting 28-ft. tube evaporators, then to the strong black liquor tank. From here the liquor is sent through D. J. Murray "cascade" evaporators and to two Combustion Engineering 250-ton each (800 psi, 800 F.) sulfate recovery furnaces each equipped with a Research Corp. electrical precipitator, in parallel. Salt cake is added

between cascade and furnace. Dracco Corp. furnished the salt cake pneumatic handling system.

The molten chemical passes from furnace to dissolving tank, mixed with weak liquor and pumped to green liquor storage, afterwards being pumped to green liquor clarifier, with its residue sent to the dregs washer. Both green liquor clarifier and dregs washer are of a new type originally tried out at National Container's Jacksonville mill. The installation there was effected from drawings but the Valdosta installation is of supplied equipment. The Dorr installation also includes the new No. 6-W Dorrco suction pump, the second of its type.

From the green liquor clarifier the overflow is split between two No. 8 slakers, located at an elevated level with the causticizers. Here makeup and reburned lime are combined and the recausticizing action is started. Each slaker overflows to a three series connected set of No. 10 Dorrco causticizers. The products of the final causticizers are combined and sent by gravity to a Dorr white liquor clarifier which continuously overflows a clear white liquor suitable for use in the digesters.

Dregs from the green liquor storage tank are sent to the dregs washer and weak liquor from there to the mud washer. Here is added the mud from white liquor clarifier. Weak liquor from the washer is sent to the dissolving tank while residue joins sludge from the water plant to move to storage and then to either of two 6 by 6 Oliver-United sludge filters, thence through the lime kilns. From here the hot lime goes to the slakers. The hot lime handling method here is found at the company's Jacksonville mill but not otherwise in the South.



PNEUMATIC SYSTEM FOR SALT CAKE

SALT CAKE pneumatic handling system was furnished by the Dracco Corp. Salt cake is added between "cascade" evaporators and furnace.



100% BROWN STOCK REFINING

VALDOSTA MILL is 100% brown stock washing and refining. Here is only one section of 48-in. Sutherland refiners.

WOOD PULP PAPER



BULKLEY, DUNTON & CO., INC.
BULKLEY, DUNTON PULP CO., INC.
BULKLEY, DUNTON PAPER CO., S. A.
BULKLEY, DUNTON CELLULOSE EXPORTS, INC.
BULKLEY, DUNTON PAPER (FAR EAST) CO., INC.
BULKLEY, DUNTON PROCESSES, INC.

In New England—
CARTER, RICE & CO. CORPORATION
and STORRS & BEMENT COMPANY

BULKLEY, DUNTON

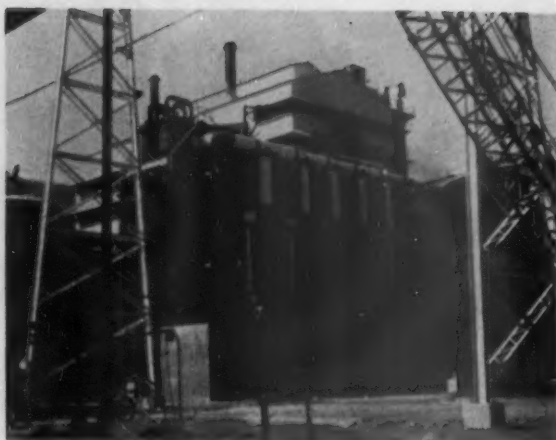
ORGANIZATION

295 MADISON AVENUE, NEW YORK 17, N. Y.



Offices and representatives in 60 cities

in the United States, Europe, Latin America, Africa, and Asia



EVAPORATORS WITH 28-FT. TUBES

Goslin-Birmingham Mfg. Co. furnished these two sets of sextuple vacuum self-supporting 28-ft. tube evaporators.

CONGRATULATIONS to NATIONAL CONTAINER CORPORATION on this Milestone of Progress!



As designers and builders of this new mill we are proud to be playing a continuing part in the industrial expansion of the South, where since 1936, we have built 16 new pulp and paper plants or additions for 10 different clients.

MERRITT-CHAPMAN & SCOTT
CORPORATION

Founded in 1860

General Offices: 260 MADISON AVENUE, NEW YORK 16, N. Y.

Cleveland • Washington, D. C. • Chicago, Ill.

Birmingham, Ala. • Milton, Pa. • Pasadena, Texas

An added unusual feature is provision of an extra "dump" tank into which the chemical may be unloaded during any situation and afterwards returned to the system.

The design capacity of the Dorr installation is 500,000 cu. ft. of white liquor per day.

Allis-Chalmers Kilns Typify Trend

Flexibility in operations is provided in the dual installation of 8-ft. 6-in. by 9-ft., 170-ft. Allis Chalmers Mfg. Co. rotary lime kilns, with Rotoclones. Use of the two-diameter kiln permits maintenance of the same internal diameter throughout but with refractory thickness in the hottest portion. These kilns are similar to the installation effected at Jacksonville a year ago, and are of a type popular in the industry. In the South, there is a trend away from a single long kiln back to the shorter multiple kiln installation. Each of the two kilns is powered by a 40 hp totally enclosed squirrel cage motor having top speed of 1200 rpm that corresponds to a kiln speed of 1.3 rpm. Three-quarter speed is considered normal operation. Kiln slope is $\frac{3}{4}$ in. per ft. An auxiliary gasoline motor is installed to provide rotation at about $\frac{1}{10}$ normal rotation to safeguard against warpage should power failure occur.

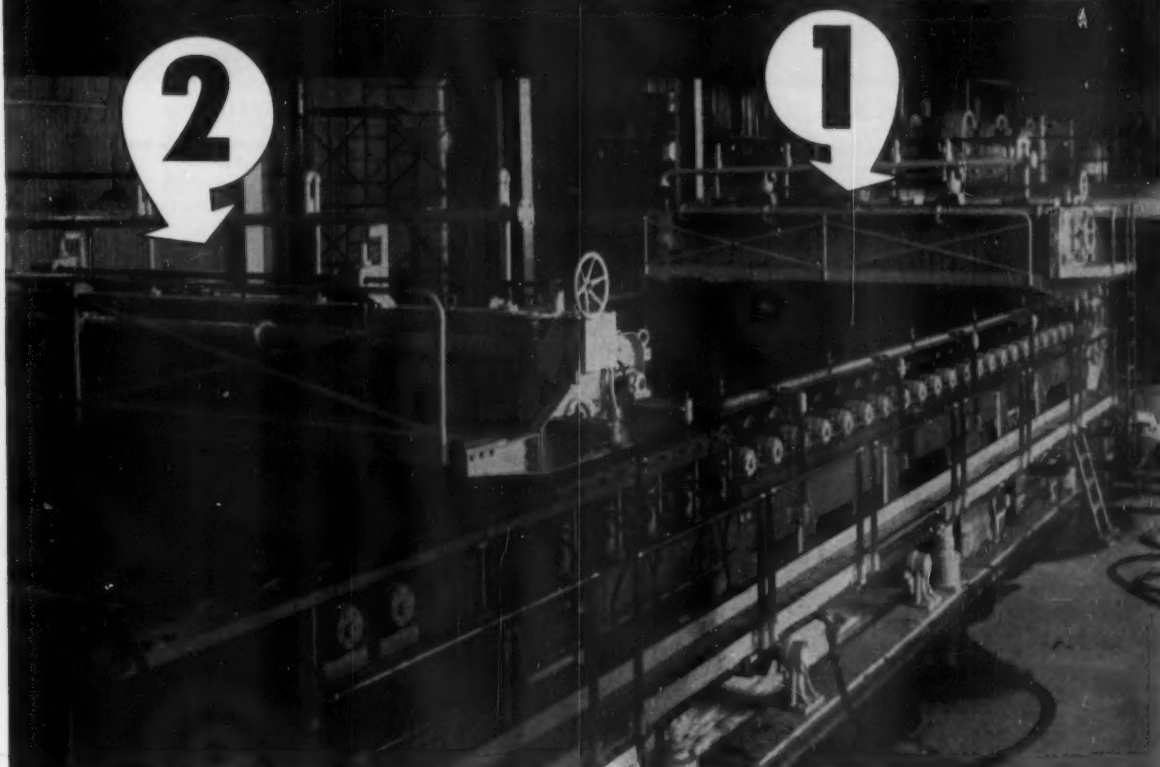
Slurry is fed by a ferris wheel feeder to the 6 by 6 ft. Oliver-United filter which discharged to a 14-in. diameter 20-ft. long enclosed screw conveyor. Sludge fed to the kiln contains 40% to 45% water.

The kiln installation is provided with a master Bailey instrument panel that enables the operator to obtain efficient operation and highest product quality by close control. This panel is equipped with radiation pyrometer for indicating and recording the burning zone temperature; exit gas temperature recorder unit; alarm horn system to sound in conjunction with abnormal high exit gas temperatures; oil flow (to burners) recorder unit; induced draft controller for automatically maintaining a constant pre-set draft at the firing hood by means of controlling the position of the damper at the feed and housing; oxygen recorder and analyzer for the kiln exit gases; and all other necessary push button stations, ammeters, voltmeters, signal lights, and gauges for the various motors and controls.

The installation represents the most modern of its kind, and incorporates all the advantages from

the **ONE-TWO** punch of **BETTER** papermaking

on **NATIONAL CONTAINER'S** **NEW VALDOSTA MACHINE**



1 Primary pressure inlet

2 Secondary pressure inlet

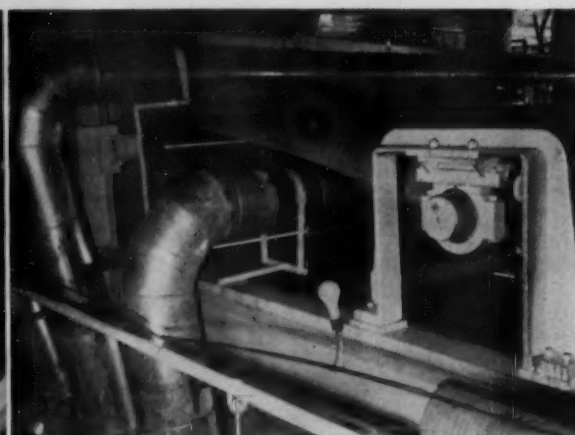


by **VALLEY**



ROSS AIR CONDITIONS FELTS

J. O. ROSS ENGINEERING CO. air system, installed for felt conditioning. The mill air system is entirely by Ross.



PART OF CLOSED STOCK SYSTEM

DEZURIK constant level headbox is located on the mezzanine floor in machine room. This is new part of closed system.

past experiences in lime sludge re-burning.

The two lime kilns have excess capacity over the initial 500 tons paper mill capacity (per day) requirements to allow for any boosted output usually realized in mills of this type after a period of time.

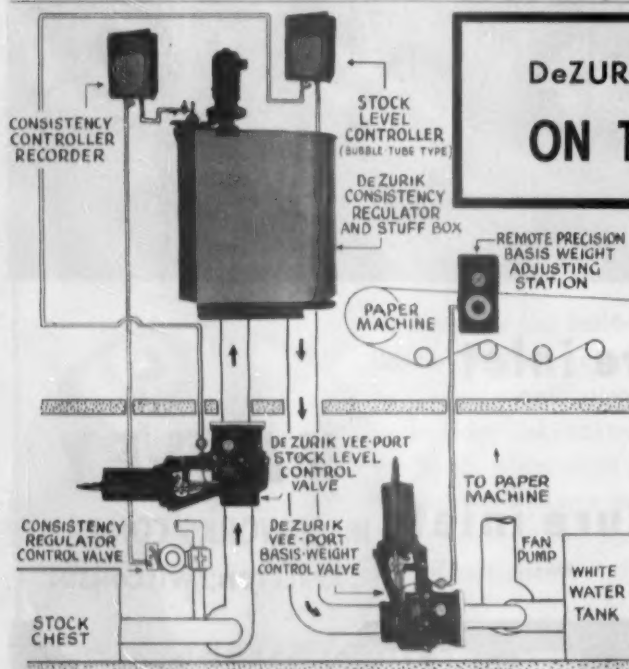
Reactor for Process Water

Water supply is drawn from three

deep wells the first of which furnishes boiler feed, going through a vertical tank hot reactor, thence through a Worthington 750 gpm treating system consisting first of three pressure filters in parallel and then three hot lime zeolite treating units, also in parallel. Pumps here are Worthington.

Process water drawn from the other two wells, is treated in a 72-ft. diameter CC3 Design Cochrane

solids-contact reactor at the rate of 6300 gpm. Not only is this type of installation relatively new in the paper industry but this reactor is classed as the largest in this field. The Cochrane solids-contact reactor operates on the principle that addition of previously formed precipitates in the form of a slurry to serve as a solids-contact agent accelerates reactions in continuous water conditioning plants. In the



DeZURIK CLOSED STOCK SYSTEMS ON THE JOB AT VALDOSTA

On the primary and secondary headboxes of the new Valdosta mill of the National Container Corporation, modern DeZURIK CLOSED STOCK SYSTEMS are again on the job to insure the best in basis-weight control. They involve DeZurik VEE-PORT VALVES for vigilant control of liquid level and basis weight. The entire system is operated from a remotely-mounted precision-control station.

Also at Valdosta, a DeZURIK CONSISTENCY REGULATOR of pipeline-type regulates consistency with maximum accuracy right after the high-density storage chest.

Throughout this modern new mill—as in so many others—DeZurik Valves and Regulators reflect the last word in precision stock-control and handling! DeZurik equipment keeps pace with and is a part of the progress of the industry.

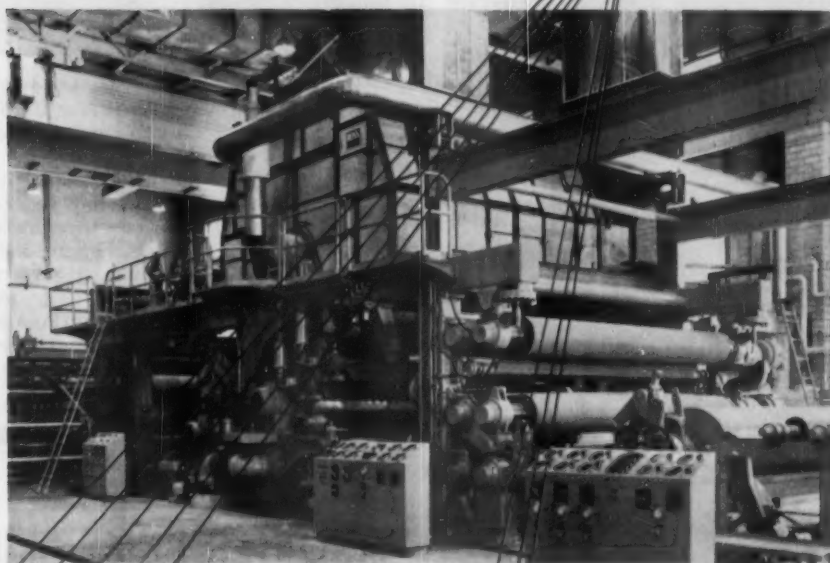
If you don't have it, why not write for complete information on the advantages of the DeZURIK Closed Stock System for paper machine supply?

DeZURIK SHOWER COMPANY - Sartell, Minn.

Performance

that has been proven in more than 95% of the industry's mills over 33 years speaks for itself...

ROSS AIR SYSTEMS



- 1 Properly heat the room.
- 2 Ventilate the room for the comfort and health of the men.
- 3 Assist the machine dryers to evaporate the water in the sheet.
- 4 Economically remove the resulting vapor.
- 5 Introduce in the most efficient and economical manner the vast quantity of air required for the removal of vapor.
- 6 Prolong the life of the dryer felts and preserve the building itself from deterioration.
- 7 Assist in maintaining a uniformly dried sheet of the proper moisture content.
- 8 Perform many other smaller but equally important duties, such as cooling the calender roll, cooling the electric motor drives, handling the trim from the machines, and other important functions.



J. O. ROSS ENGINEERING CORPORATION

MANUFACTURERS OF AIR PROCESSING SYSTEMS

444 MADISON AVENUE

NEW YORK 22, N. Y.

ATLANTA • BOSTON • DETROIT • CHICAGO • SEATTLE • LOS ANGELES
ROSS ENGINEERING OF CANADA, LIMITED, MONTREAL, CANADA • CARRIER-ROSS ENGINEERING COMPANY, LIMITED, LONDON, ENGLAND

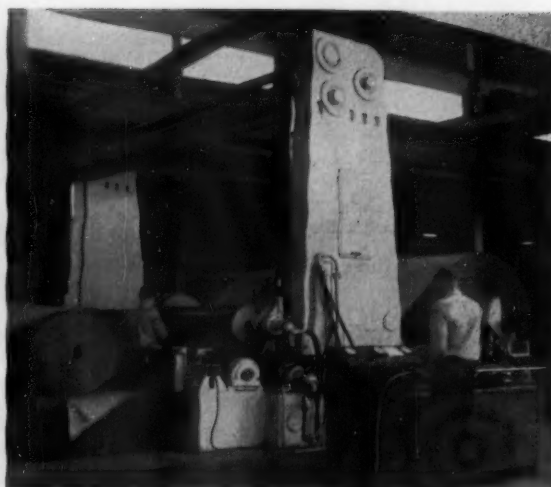
absence of these solids-contact factors, the reactions are slow and precipitates fine. In their presence the reactions are accelerated and well formed precipitates formed almost immediately. The slurry is present where the raw water is introduced. The effect of the solids-contact method, because of reduction of detention time, makes possible reduction in size of the treating plant to one-quarter or less of that required by older methods.

Progress is from reactor to a



WINDER FITTED WITH HYDRAULIC TABLE

Bagley & Sewall winder is capable of speeds to 5,000 fpm, and is fitted with hydraulic table for receiving and despatching the rolls.



AT OPERATING END OF KNIFE GRINDER

BIG HANCHETT knife grinder has important task in keeping up production of right-sized chips and W. O. Lee, experienced machinist, knows it.

13,000 gpm cooling tower furnished by The Fluor Corp., Ltd., also reputed as without peer in the paper field. From here Ingersoll-Rand pumps serve two supply lines, one to circulating water system and the other to water tower thence to mill process. Interesting here is that pipe lines are carried on an elevated walk-way instead of being buried, insuring against damage from passing excessive surface loads and providing facile maintenance.

Announcing the NEW

HANCHETT

MODEL

SLITTER KNIFE GRINDER

for

Top or Bottom SLITTERS

WET GRIND



- finest finishes
- extreme accuracy
- rigid construction
- capacity 3" to 24" diameter
- semi or fully automatic
- positive and accurate fixturing

HANCHETT MANUFACTURING COMPANY

World's Largest Manufacturer of Knife Grinding and Saw Sharpening Machinery

MAIN OFFICE — Big Rapids, Michigan

WEST COAST — Portland 1, Oregon





NCC EXECS SUPERVISE NEW MILL
WILLIAM T. WEBSTER (left) is Vice Pres. in charge of all National Container mill operations and KARL GUEST (right) is Manager of the Valdosta kraft pulp mill.

Staff Trained In Other NCC Mills

Plant Manager *K. M. Guest
Personnel Mgr. *J. C. Keegan
Safety Director *W. T. Carter, Jr.
Office Manager *J. C. Booth
Purchasing Agent *L. Binns
Pulp Supt. *M. J. Farris
Asst. Pulp Supt. *A. R. Varnado
Asst. Pulp Supt. *J. E. Burnett
Asst. Pulp Supt. J. Gordon
Asst. Pulp Supt. J. T. Shankles
Woodyard Supervisor E. I. Wilson
Paper Supt. *W. C. Hayes
Asst. Paper Supt. *H. Schmidt
Asst. Paper Supt. W. A. Woods
Asst. Paper Supt. A. E. Dennard
Asst. Paper Supt. J. J. Jordan
Shipping Supervisor *R. Joseph
Plant Engineer *J. E. Mailhos
Power Supt. *E. R. Burr
Asst. Power Supt. *M. L. Garmon
Asst. Power Supt. E. B. Hewett
Asst. Power Supt. D. W. Chism
Asst. Power Supt. H. M. Geer
Electrical Engineer F. A. Adams
Maintenance Supt. *H. M. Burnett
Master Mechanic *W. J. Miles
Asst. Master Mech. *J. W. Waltman
Labor Supervisor *H. A. Folsom
Design Engineer D. M. Conant
Instrument Supvrsr. C. H. Nobles
Industrial Engineer *E. S. Sheppard
Junior Ind. Enginr. J. G. Copeland
Chief Storekeeper *B. Dozier
Technical Dept. Supt. ... F. B. Schelhorn
Tech. Dept. Asst. Supt. ... *J. C. Clark
Tech. Dept. Supvsr. *D. F. Carey
Tech. Dept. Supvsr. H. C. Croom
* From N.C.C. Mill, Jacksonville, Fla.
** From N.C.C. of Mich., Ontonagon, Mich.
*** From N.C.C. of Va., Big Island, Va.

CROWN Z GOT MERGER OK

Considerable publicity has been given a formal FCC complaint stating that the Crown Zellerbach-St. Helens Pulp & Paper merger might lessen West Coast kraft products. C-Z will prepare a reply but it already had fully investigated the legality of the transaction, it pointed out. Longview Fibre, St. Regis Paper and Everett Pulp & Paper are three other important producers of kraft or modified kraft paper on the west coast.

PULP & PAPER — April 1954

M-C & S Engineers who pushed Valdosta through in 7 months: (l to r): J. R. AITKEN, PETER KALLEIS, A. E. PORTER, J. A. L. MALONE and C. A. PORTER.



Valdosta Mill Built In Seven Months

J. R. AITKEN, designer and N.Y. project engineer for Merritt-Chapman & Scott Corp., is a graduate of N. Y. College of Engineering. He joined Robert Gair, Inc., as a plant engineer in 1934, remaining until 1939, at which time he became associated with Dilts in the development of the Hydrapulper. In 1940 he joined Hercules Powder Co. as supervisory area engineer on a nitro-cellulose (Redford Arsenal) project. He became associated with American Writing Paper Corp., Holyoke, Mass., in 1944 as assistant chief engineer, remaining until he joined Merritt-Chapman & Scott in 1950.

His work with the New York firm has included such projects as the new machine expansion and the semi-chemical installation at Camp Mfg. Co., Franklin, Va.

Top M-C & S men on the Valdosta job, in addition to Mr. Aitken, included: Peter Kalleis, resident project manager; A. E. Porter, assistant project manager and general superintendent; J. A. L. Malone, job engineer; C. A. Porter, chief electrical engineer; and, L. E. Hoynes, office manager. The entire project was under E. A. Pasha, vice president i/c of industrial contracts.

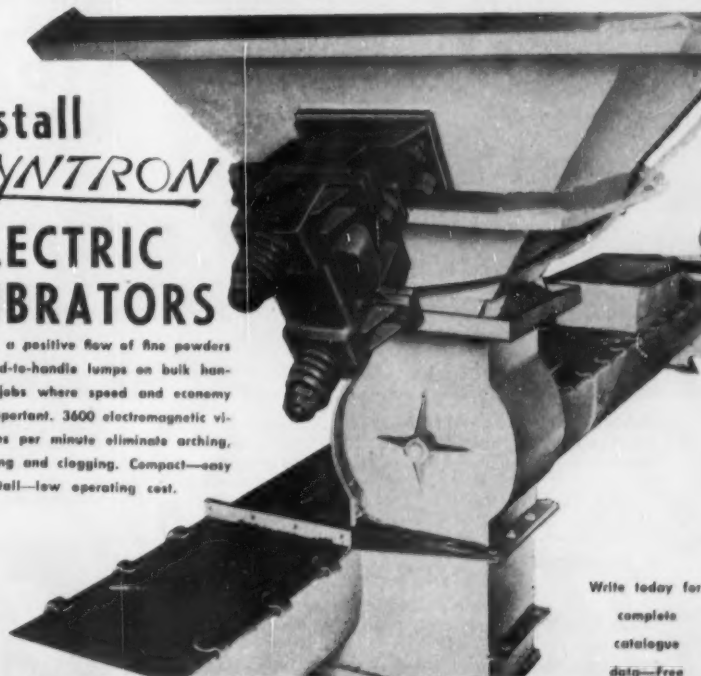
Construction records achieved at Valdosta are interesting:

The first setting of steel was on Jan. 23, 1953. Installation of equipment began July 1. First digester blow was at 4:30 p.m. Jan. 31, 1954. First paper on reel was accomplished at 6:02 p.m. Feb. 2, 1954. Seven months for mechanical installation of a completely new plant is considered outstanding.

for Free-flowing Bins, Hoppers and Chutes

install **SYNTRON** ELECTRIC VIBRATORS

Assure a positive flow of fine powders or hard-to-handle lumps on bulk handling jobs where speed and economy are important. 3600 electromagnetic vibrations per minute eliminate arching, plugging and clogging. Compact—easy to install—low operating cost.



Write today for
complete
catalogue
data—Free

SYNTRON COMPANY

659 Lexington Avenue

Homer City, Penna.

A LORAIN CRANE IS A Many-Purpose Tool FOR ANY PAPER MILL

It's good business to invest in a piece of equipment that can handle a wide variety of material handling jobs. That's why Lorain Self-Propelled Cranes are finding more and more uses in the pulp and paper industry. They have the capacity, the mobility and the speed to fit wherever yard material handling is needed. These versatile rubber-tire cranes open new fields of use for paper mills... handle everything from raw pulpwood to bulk chemicals... to finished paper. Once you own a Lorain, you'll find a score of ways to enable it to pay off in savings of time, money and manpower.

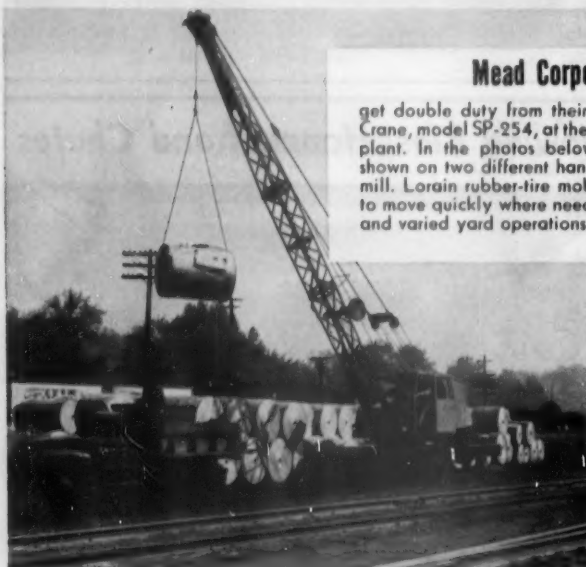
Here's picture proof of the way others are saving the Lorain Crane way.

New York and Pennsylvania Paper Co... use a Lorain Self-Propelled Crane, model SP-254W, to stack and load pulpwood at their Lock Haven, Penna., plant. A wood grapple handles 5' logs, approximately 4' to 6' in diameter. This is their second Lorain.



Mead Corporation...

get double duty from their Lorain Self-Propelled Crane, model SP-254, at their Lynchburg, Virginia, plant. In the photos below, the same Lorain is shown on two different handling operations at the mill. Lorain rubber-tire mobility makes it possible to move quickly where needed to widely scattered and varied yard operations.



HANDLING FINISHED ROLLS... One of the extra jobs the Lorain Crane performs at the Mead Corp. plant is stacking and loading out rolls of paper. The mobile Lorain rolls right up to the siding, with one man at the controls—handles the heavy rolls—then hurries off to another job.



HANDLING BALED SCRAP PAPER... Again, it is the same Lorain Crane that moves up to the baled scrap paper stockpile. Equipped with tongs, or grab, it unloads the 1200 lb. bales from cars and stacks them high to save valuable plant yard space.

TL CRANE FEATURES

To Lorain Self-Propelled versatility add these design and operating features... one-man operation; rubber-tire mobility; 5 interchangeable boom front ends; interchangeable turntable components; 5 identical shoe clutches; anti-friction bearings; oil enclosed gears. There are many more. Your nearby Thew-Lorain Distributor can describe them and the rest of the line on rubber tires or crawlers.

THE THEW SHOVEL CO., LORAIN, OHIO

THEW LORAIN

POWELL RIVER

UNBLEACHED SULPHITE PULP



- ★ STRENGTH
- ★ COLOR
- ★ SERVICE
- ★ DEPENDABLE
SUPPLY

**POWELL RIVER
SALES COMPANY
LIMITED**

1204 STANDARD BUILDING - VANCOUVER, B. C.

APA Told How to Cut Cost, Speed Growth



NEW PRESIDENT GREETED BY THE OLD

LOUIS FREEDMAN (left), Vice President, Penobscot Chemical Fibre Co., given best wishes of E. O. Ehrhart, President, Armstrong Forests Co., on assumption of Presidency of American Pulpwood Assn. Mr. Ehrhart served two years as APA's head.

LOUIS J. FREEDMAN, vice president, Penobscot Chemical Fibre, and for many years head of this company's woodlands operations, was elected president of the American Pulpwood Assn. at its 20th annual meeting in New York, Feb. 18. He succeeded E. O. Ehrhart, president of Armstrong Forests Co., who headed the association two years.

The APA program at the Waldorf encompassed a review of technical developments, management of lands, mechanization and emphasis on need for basic and applied pulpwood research.

In the session on technical developments, chairmanned by D. E. Hess, Glatfelter Pulp Wood Co., it was pointed out by W. R. McKay, Eastern Corp., that the past year has seen wide acceptance of the chain saw as an integral part of woodlands operations; the increased commercial application of chemical debarking; and continued development of portable debarkers effective enough to meet industry requirements.

B. G. Buell, Northern Paper Mills, said the Lake States area had been concerned about growth rates, and how to determine these rates accurately enough to establish sustained-yield cutting. Experiments have been carried out in this area in silviculture, planting, thinning and discing to aid growth, and research has been inaugurated to

develop control over insects and disease, which Mr. Buell called "Enemy No. 1."

Recent equipment developments enabled use of raw materials formerly discarded by the sawmill for the manufacture of pulp and paper, with several large Southern and Eastern mills installing equipment for chipping wood waste, according to D. B. Armstrong, International Paper. He predicted extension of waste recovery to sawmills of small capacity.

H. R. Josephson, chief, division of forest economics, U.S. Forest Service, said forest protection programs are the joint cooperative responsibility of industry and public agencies. Public responsibilities include providing a "minimum level of protection for all forest land regardless of ownership. Industry should supplement public efforts to protect more fully the high values of its own lands." Where the public is not yet aware of its responsibility, he said, industry will need to help the state foresters build up a strong protection organization.

Industry has a responsibility, said Mr. Josephson, to minimize the possibility of fire starting on and escaping from its lands, and to protect forests from invasions from insects and disease.

If land has to be used for growing pulpwood alone, it is more profitable to grow it using short rotations,

according to studies revealed by Earl Porter, International Paper. Mr. Porter said that it has been shown that by diversified utilization and longer rotation, the greatest profit will be obtained, due to the rapid increase in unit values as the tree grows into sawlog sizes.

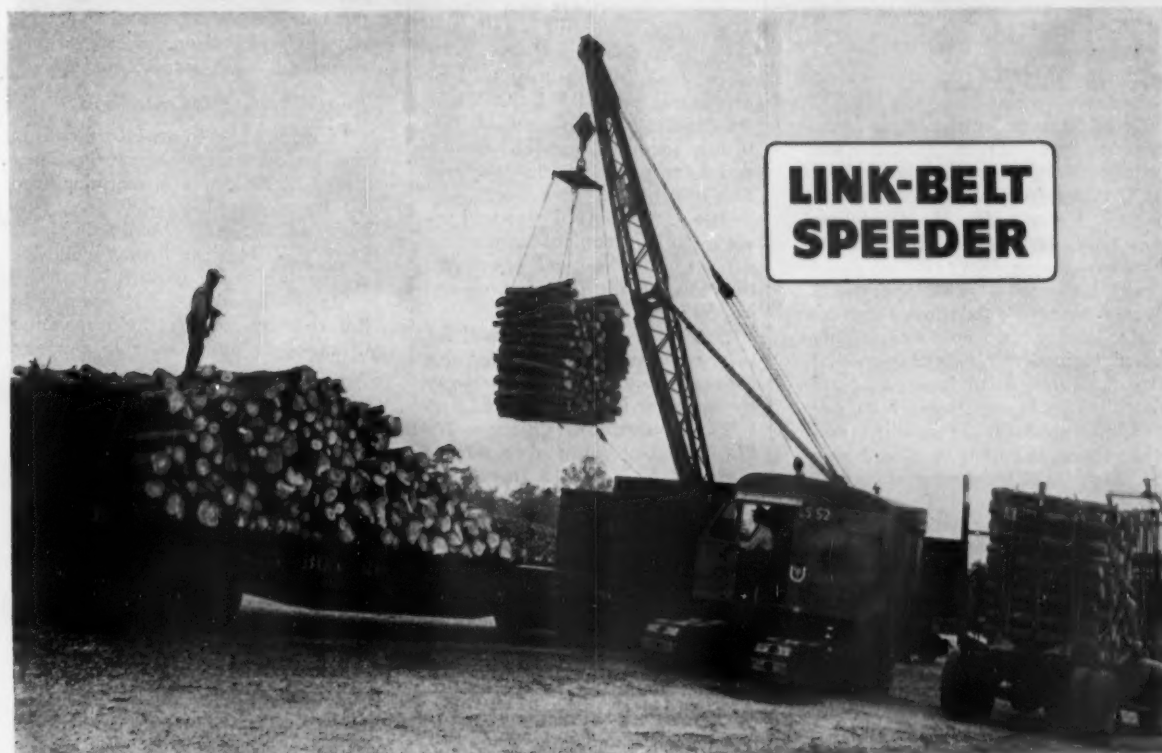
He said periodic profits per acre show \$32.10 for 35-year rotation; and \$11.20 for a 55-year pulpwood rotation. But when utilizing timber for both pulpwood and sawtimber, the acre value was \$52.20.

Viewpoints on Mechanization

In a panel discussion on mechanization from the standpoint of pulpwood producer, it was brought out that further mechanization will continue to cut down costs of pulpwood manufacture and transportation. The chain saw, development of road building equipment, and the development of mechanical hauling devices were listed as examples.

S. D. Forbes, S. D. Forbes, Inc., said that he has started furnishing mechanical service to his producers at low cost in order to make the maximum use of mechanical equipment in pulpwood production. S. M. Adams, Plateau, Ala., said there are approximately 150 individual producers trucking 100,000 cords of pulpwood per year directly to the mill yard in his area and 35,000 cords per year to rail yard. These

Mechanization--key to profit



This LS-52 averages only 20 minutes to load 18 cords on this rack car. Speed-o-Matic controls and independent swing and travel assure fast, accurate placement of loads even on far side of car.

Link-Belt Speeder shovel-cranes increase output, conserve labor, reduce your costs!

LEADING pulpwood handlers throughout the U. S. and Canada find that a Link-Belt Speeder with Speed-o-Matic controls is their best answer to moving bigger cordages at lower costs. These fast, extremely easy-to-handle rigs frequently demonstrate efficiency which is almost unbelievable. In fact, several companies report that their Link-Belt Speeders have paid for themselves in one year—in reduced demurrage charges alone!

Prime factor behind the Link-Belt Speeder's superiority for pulpwood handling is its Speed-o-Matic power hydraulic control system. Speed-o-Matic provides true, feel-of-the-load, finger-tip-touch control . . . assure fast, safe and accurate load handling with a sling, grapple or pusher blade.

For complete details on Link-Belt Speeders, how they're improving pulpwood handling methods—see your distributor. Or write for free 16-page illustrated booklet, "How to cut costs, speed pulpwood handling at the mill—in woodlands."



When LS-52 has all cars loaded, slings are removed and replaced with a concrete bumper. Due to accuracy with which far side load has been placed, only near side has to be bumped. In slack periods, fully convertible LS-52 can be rigged as shovel or hoe to build access roads, dig drainage ditches, etc.

LINK-BELT SPEEDER CORPORATION, Cedar Rapids, Iowa

BUILDERS OF A COMPLETE LINE OF CRAWLER, TRUCK AND WHEEL-MOUNTED SHOVEL-CRANES

LINK-BELT SPEEDER

PULPWOOD SECTION

producers own their own equipment and are strictly independent. However, they are assisted in financing of equipment purchases.

Growth of Pulp Fiber

Growing need for studies in forest genetics and fiber growth was brought out by a panel headed by R. O. Gustafson, Westvaco Experimental Forest; G. H. Chidester, pulp and paper chief, U.S. Forest Products Laboratory; H. J. Lutz, Yale University, and Scott S. Pauley, Cabot Foundation, Harvard.

Mr. Pauley said evidence is sufficient to justify the conclusion that if silviculture is to have a sound biological basis, and thus insure the maximum growth of pulp fiber and other forest products, it is not safe to ignore the existence of intra-specific variability in forest trees and the manner in which it is inherited. As information on inheritance in trees accumulates, the silviculturist will be able to exert a direct and controlling influence over the genetic quality of reproduction, and under intensive management practices it can be predicted that through the utilization of forest-tree genetic facts, high-yielding and otherwise desirable new forms may be produced and propagated at will.

APA Elections

G. B. Amidon, Minnesota & Ontario Paper Co., was elected vice president of APA at the board meeting. He joins W. J. Damtoft,

Soon To Be Ready 1954 Pulpwood Annual

Complete papers and discussions at the annual meeting of American Pulpwood Assn. in New York in February will be published by PULP & PAPER in its 1954 Pulpwood Annual. This is the second year the Annual has been published in cooperation with APA.

The 1954 Annual also will review APA technical committee activities of the past year, and the organization and program for 1954.

Copies of the Annual will be ready May 1, and may be ordered now at \$1.00 per copy by writing PULP & PAPER, at 1791 Howard St., Chicago 26, Ill., 370 Lexington Ave., New York 17, N. Y., 3518 Dante St., New Orleans 18, La., or your nearest regional PULP & PAPER office.

Champion Paper & Fibre Co., re-elected vice president a second year.

APA committee heads for the year will be: Finance committee—Louis Freedman, ex officio; legislative committee—H. A. Swenning, Hollingsworth & Whitney Co.; training and safety committee—R. F. Bower, Hammermill Paper; mechanization committee—J. E. McCaffrey, International Paper; forest management committee—D. B. DeMeritt, Dead River Co., and public relations—J. H. Keener, Champion Paper & Fibre.

New Portable Barkers Are Compared

The two-day meeting of the Appalachian Technical Committee of the American Pulpwood Assn. held in Charlottesville, Va., brought out discussions on portable barkers. D. W. Sowers, Jr., West Virginia Pulp & Paper Co., was chairman, and C. P. Shull, Armstrong Forests Co., led the discussion.

Highlights of a review by W. H. DeRosier, forester for APA:

"Bark removal undoubtedly represents one of our industry's greatest problems.

"*Rosiers*: Here knives are used to actually cut the bark away. Examples are the Crouse Rosser and Peppy Peeler. Similar machines known in the post and pole treating industry are the Nelson and Eford barkers. In this category are units

employing wire brushes. Principal disadvantage of this type is that depth of cut is difficult to control.

"*Hydraulic Erosion*: Examples are the Allis-Chalmers, Hansel, Simons, etc.

"*Flail*: Hammering objects are used, as chains, metal balls, steel lugs, etc. Examples are the Nekoosa Edwards and Carpenter debarkers.

"*Pressure*: There have been experiments with thermo and hydro pressure bark removal employing a principle which is a modification of the Masonite fiber separation process. These experiments are in very early stages.

"*Cambium Shearing*: This type employs a series of tools driven into the bark as they are drawn along or around the stick causing the

bark to be sheared by a scraping action. This type has received the greatest development effort in the last few years, possibly shows greatest promise. Included are the Andersson stationary and portable models, Nickolson, Mira, Sund, Skoglund, Valo, Impco, etc.

Impco Barker Is Described

"I would like to go into detail on the Impco Barker currently being tested in Maine. It is manufactured by Improved Machinery, Inc., Nashua, N.H., who obtained rights from the Swedish firm which designed the Sund barker.

"Impco has devoted 18 months to the redesign of the Sund machine to make it more suitable for our requirements. Their present machine weighs approximately 16,000 lbs. and is to be made available as a stationary type, portable type for towing or a mobile type with self propelling drive by simply adding parts. The present unit is powered by a Wisconsin VG4D, 36 hp engine (2200 rpm).

"Single power source is so laid out that any suitable engine can be adapted to the machine. At a later date it is planned to design machines for log and tree length. The present debarker will only accommodate wood of 4 to 5 ft. with a diameter range 4 to 16 ins.

"The machine is entirely automatic. Feed works and debarking tools are self opening and self adjusting. The bolt has merely to be placed on the infeed conveyor. Feed rate varies from 30 to 120 lineal fpm. Six debarking tools rely entirely on spring pressure instead of employing pneumatics or counterweights. The scraping action shears the bark at the cambium layer with negligible loss of wood. Production runs from 3 to over 20 cords per hour depending on average diameter and bark removal conditions."

JAPS TO GET PULP FROM CANADA

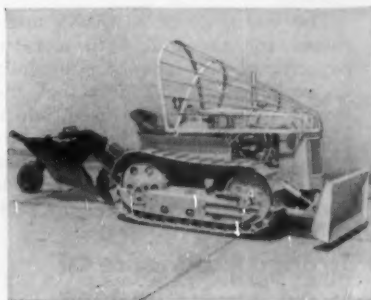
Reports were current at press time that the Japanese company organized to join with an American firm in bidding for Alaska timber for a pulp mill has abandoned these plans and is now arranging to get pulp from western Canada.

Marathon Remodel Job

Marathon Corp., Menasha, Wis., is spending \$100,000 to remodel the former Jersild Bldg., Neenah, Wis., and its manufacturing division central staff recently moved from there to its new Graphic Arts Bldg.



this dozer has all the angles!



Excellent for forestry and lumbering work is this fire-line plow attachment on the tractor-dozer. Brush protector is easily attached or removed. Plow is all hydraulic...raises or lowers from the tractor seat. Angling and tilt blades are also available for the dozer.



An efficient front-end loader is another attachment that makes the tractor-dozer even more useful. It attaches quickly and easily to a stationary mounting frame. Uses the same hydraulic system and control as the dozer.

When it comes to figuring ways to cut costs and speed work, the Oliver "OC-3" tractor-dozer has all the angles. Why? Well, for one thing it's compact and turns on a dime. You get into places you can't reach with a larger machine...do many jobs formerly done by hand.

You have a choice of blades and a front-end loader for all types of work. Another thing, finger-tip hydraulic control gives you the down pressure and accurate adjustment you need to do a fast, clean job. And, you get the power, traction and clearance to work in any weather, any ground condition.

Here's another angle that's worth figuring—takes only a light trailer or truck to move the "OC-3" tractor-dozer from job to job. The fast, easy transport of this unit puts you in line for more work at distant points. Why not check this rugged, economical team for your work? A call or visit to your Oliver Industrial Distributor will put the tractor-dozer on your site for a demonstration.

THE OLIVER CORPORATION

400 West Madison Street, Chicago 6, Illinois

THE OLIVER CORPORATION



A complete line of industrial wheel and



crawler tractors.

Big Coast Meeting Set for May 20-22

This year's joint annual spring meeting of Pacific Coast Superintendents and Coast Tappi, May 20-22 at Oregon's Gearhart ocean-side resort, offers a well-rounded technical program, adequate housing, good food, golf and other recreational attractions.

Feature program topics include wood preparation, treated by industrial experts from the aspects of barking, chipping and chip handling; papermaking, treating on machine clothing and accessories; acid pulping—increasing sulfite yield; alkaline pulping—kraft mill losses, washers and lime kilns. The final

session will be devoted to waste reduction from aspects of personnel, material and time. Ed Nunn, asst. to resident manager, Crown Z, West Linn, is program chairman.

A complete and varied program has been arranged for the ladies.

Fred J. Weleber, chairman of Coast Tappi and chief chemist of Publishers' Paper Co. and W. W. Clarke, chairman of Coast Superintendents and paper mill superintendent of Longview Fibre Co., are general co-chairmen.

Burke Morden, Morden Machine Co., and "Pete" Peterson, Hercules Powder, are co-chairmen of finance.



FRED J. WELEBER (top left), Publishers' Paper Co., and W. W. CLARKE (top right), are Co-Chairman for Coast Joint Convention at Gearhart, Ore.

ED NUNN (lower left), Crown Z, West Linn, Ore., is Program Chairman, and GORDON PETRIE (lower right), The Black-Clawson Co., is Housing Chairman.



Quantity Production

QUALITY
SPECIFICATION
SIZE PULPWOOD
CHIPS FROM
• SLABS • EDGINGS
• ROUND WOOD
OR
VENEER CORES

New MURCO
HIGH SPEED MULTI KNIFE
WASTEWOOD CHIPPER

3 SIZES

Made in 3 sizes, 56" diameter; 64" diameter; 72" diameter. This is the most flexible, versatile chipper design now available to chip producers, providing quantity production of quality specification-size chips demanded by pulp producers. MURCO design is a result of more than 30 years experience in the manufacture of pulpwood chippers . . . MURCO Chippers built in 1923 are still performing efficiently.

Write for complete proposal telling us size of largest slab or edging, volume of wood to be processed per hour, choice of drive and whether chips will be pneumatically conveyed.

FEATURES

- Operates with a minimum of slivers, sawdust and chip rejects.
- Economically priced—easy to maintain.
- Few parts to replace . . . low maintenance cost.
- Can be used as a portable, unit mounted on skid or trailer for Diesel Engine drive.



D. J. MURRAY MANUFACTURING CO.
Manufacturers Since 1883 • Wausau, Wisconsin

Reservations are to be submitted by May 1 to Housing Chairman Gordon Petrie, West Coast manager, The Black-Clawson Co., Mayer Bldg., Portland 5, Ore. Louis H. Blackerby, PULP & PAPER regional editor, is publicity chairman.

Another Bid for Pulp Mill at Prince George

J. X. Desfarges and French and Mexican associates are negotiating with the city of Prince George in central British Columbia for a 25-acre site for a pulp mill using wood waste.

The low price of \$2,000,000 mentioned for the mill with a rated capacity of 150 tons of pulp daily is explained by the fact that the Bouffe process will be used, which Mr. Desfarges claims has been operated successfully by Rodriguez interests in Mexico. Nitric acid is the principal chemical used, he said.

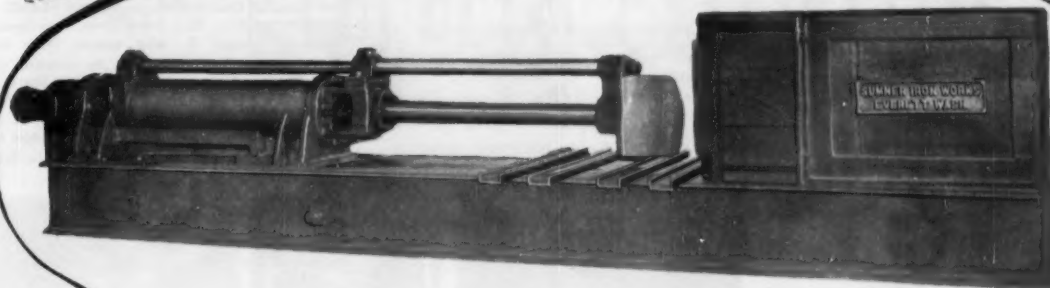
Strange Experience Of Esco's Don Livingstone

Don Livingstone, who represents Electric Steel Foundry in Canada, had a strange experience which he believes might be connected with his crash landing in a plane near Prince Rupert, B.C., some months ago, when he had to swim for his life.

At a recent logging meeting in Seattle, he had severe pains diagnosed as an ulcer in area where he was injured in the crash. He was operated on, but no ulcer. He recovered nicely.



THE AXE *with the* **BUNYAN PUNCH!**



SUMNER'S *steam* **AXE SPLITTER**

For rapid breakdown of your logs to a size suitable for chipping or grinding, the SUMNER Steam-Axe-Splitter operates with a force and competence Paul Bunyan might well have envied.

The Splitter customarily is built with a 54" stroke for 48" long wood, but can be constructed to accommodate greater or lesser log lengths. The business end of the Splitter is a heavy single-bit cast steel axe with guide rods and two babbitted guide bearings.

The anvil is of heavy cast steel, cushioned against a wood bulkhead set against a sand-filled box. The entire assembly is mounted on a heavy structural steel frame, making the unit self-contained.

As with all SUMNER equipment, the Steam Splitter incorporates simplicity and sturdiness with proven operating reliability. We invite you to send for details on our complete line of pulp, paper and board mill machinery.

Designers and
Builders of
Pulp and Paper
Mill, Sawmill,
Boardmill and
Shingle Mill
Equipment

ESTABLISHED 1892

SUMNER IRON WORKS

EVERETT, WASHINGTON

IN CANADA: CANADIAN SUMNER IRON WORKS, LTD. VANCOUVER B.C. CANADA

Crown Orders Big Tissue Machine As Scott Reveals More Expansion

Scott Shoots For Sales of \$300,000,000

With its goal set for a \$300,000,000 sales year within five years (it grossed \$149,262,000 from paper in 1953), Scott Paper Co. is asking stockholders' approval Apr. 27 of an increase of common shares from 5,000,000 to 10,000,000 and of authorized indebtedness from \$25,000,000 to \$50,000,000.

While no specific financing plans were stated, last month PULP & PAPER published the news that engineering has begun for No. 3 and No. 4 Yankee machines in the new Scott paper mill in Everett, Wash. No. 1 (a 206-in. Yankee) started up last December and No. 2 will roll this summer.

Raymond C. Mateer, executive vice president, said there is no danger of Scott overexpansion as long as quality goods are produced at the right price. It is increasing its advertising in 1954 by \$250,000 to \$6,500,000. It recently placed full-page ads in 29 Pacific Coast newspapers announcing its new and increasing tissue production at Everett, Wash., where it also is increasing sulfite pulp production from 600 to 720 tons per day.

New Tissue Machine Goes in St. Helens Mill

After consideration of several possible locations, Crown Zellerbach has decided to install a new 258-in. Yankee dry crepe machine, being made by Beloit Iron Works, at its subsidiary St. Helens Pulp & Paper Co. plant, St. Helens, Ore.

Expenditure of \$14 to \$15 million has been authorized for modernizing and expanding the plant. This includes the new paper machine (largest of its kind in the world), modernization and speed-up of one existing machine, increasing pulp capacity, buildings and installations to substantially modernize and expand production. The new machine and modernized No. 1 machine are expected to be producing paper early in 1955.

The new machine will make dry crepe toilet, napkin and facial tissue type grades from bleached kraft pulp at rate of 35,000 tons per year, brings total number of machines operating in C-Z mills to 44—34 in Washington and Oregon.

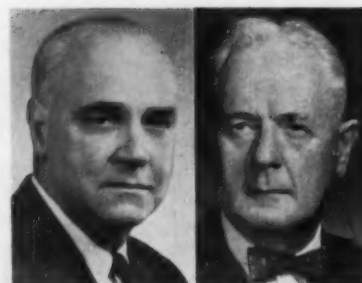
Modernization undertaken at the St. Helens plant prior to its acquisi-

tion last year by C-Z will (with additions) be completed at a cost of \$7 million. To substantially increase kraft paper production here and broaden versatility of machines, an additional \$7,000,000 will be spent by 1955.

Indicating more expansion will follow, President J. D. Zellerbach said: "We are a growth company in a growth industry."

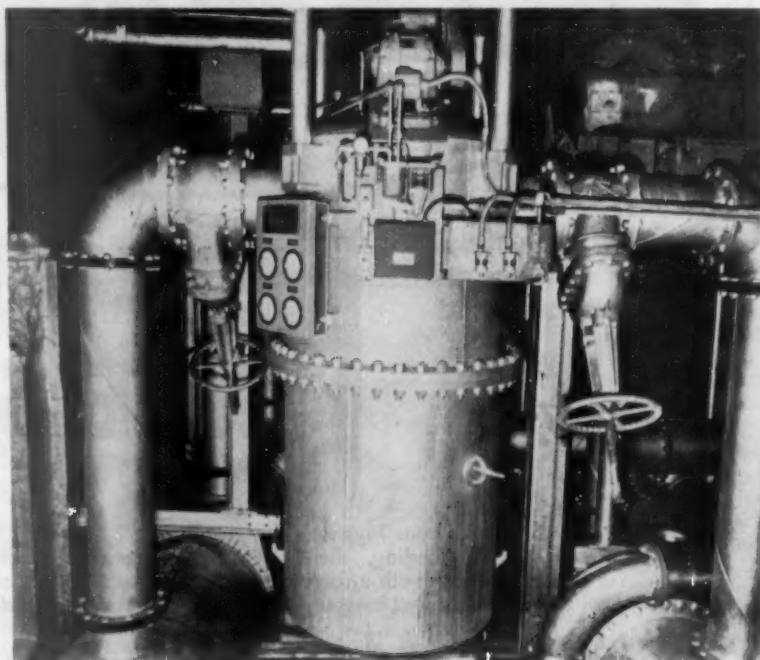
COOSA RIVER EXPANSION

Just four years after it started up two 226 in. Fourdriniers, making 350 tons daily, on newsprint, Coosa River Newsprint Co., Coosa Pines, Ala., is planning a two-year \$3,000,000 expansion to increase production by 20,000 to 25,000 tons a year.



IN NEW POSTS FOR CROWN Z

FRANK N. YOUNGMAN (left), elected Board Chairman and Director of Pacific Mills Ltd., Canadian Western Lumber Co., and Elk Falls, Ltd., all of Vancouver, B. C., subsidiaries or affiliates of Crown Zellerbach, and FRANK A. DRUMB (right), Asst. Vice Pres. i/c Special Projects, Crown Z, who moves from San Francisco to Portland, Ore., to assume certain functions previously carried on there by Mr. Youngman. Meanwhile PAUL E. COOPER, Pres. of Pacific Mills, has become Pres. of Elk Falls and announced plans to change the name of Pacific Mills to Crown Zellerbach Canada, Inc.



CLEANS RIVER WATER FOR PROCESS USE

THIS IS CLOSE-UP of one of five identical CUNO ENGINEERING CORP. Flo-Klean filters

in Belgo Div. Mill of Consolidated Paper Corp., Shawinigan Falls, Que.

Cuno Filters Clean Water at Quebec Mill

Said to be the biggest installation of its kind in a paper mill is Cuno Engineering Corp.'s Flo-Klean filters at Belgo division mill of Consolidated Paper Corp. in Shawinigan Falls, Que.

Used on raw river water, five identical Flo-Klean units in this mill prepare it for general and process use. This water is particularly dirty during logging operations.

The five units filter 25,000 imperial (30,000 U.S.) gallons per min.

They are doing a job that originally was expected to require six filters such as Cuno builds at Meriden, Conn. (in Canada by Peacock Bros, Montreal).

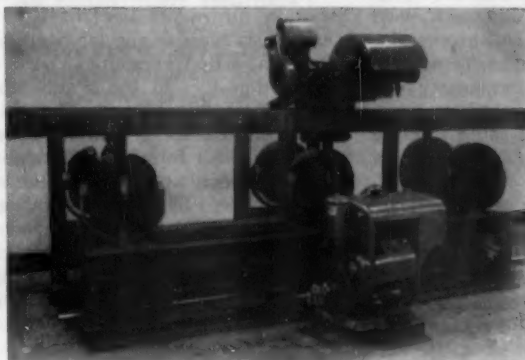
New York, Wisconsin and Louisiana mills are using Cuno Flo-Klean filters. An installation is going to A. S. Borregaard in Norway.



Convert Your Saw Mill Waste from Ash to Cash with **SODERHAMN** **BARKERS and SLAB CHIPPERS**

If you have a 20,000 to 35,000 board foot saw mill, you cannot afford any longer to burn your waste. Soderhamn's new D-3 Barker and modern Slab Chipper can be installed in your mill for only \$25,000. These performance proved machines will pay for themselves in less than a year and make clear profits from that time on. For mills cutting more than 35,000 board feet, use Anderson Barkers and larger models of the Soderhamn Slab Chipper and Screens.

Sturdy — Dependable — Easy to Maintain



**SODERHAMN
HF-30 SLAB CHIPPER**

Note the exclusive field proved feedwork—
a must to produce uniform chips from all kinds
of saw mill waste. Producing 5 cords of chips
per hour at 60 H.P.

For specifications and complete information about Soderhamn
wood waste recovery equipment, including Barkers, Chippers, Chip
Screens, Re-Chippers, and Swedish Gang Mill equipment, wire,
phone or write

SODERHAMN D-3 BARKER

(Patent Pending)
Now Available with Cutterhead or Chain
(Interchangeable)

This new, low cost barker has a maximum feed
speed of 40 linear feet per minute. Handles 10-foot
lengths and up. Log diameter range 5" up to 36".
Gasoline or 30 H.P. electric power. The barker is part
of the conveying system and therefore can be installed
without any additional conveyors.



SODERHAMN MACHINE
MANUFACTURING CO.
SODERHAMN, SWEDEN SINCE 1864 TALLADEGA, ALABAMA

CANADIAN REPRESENTATIVES: West Coast: Canadian Sumner Iron Works, Vancouver, B.C.; East Coast: Forano Limited, Montreal, Canada



M. J. OSBORNE, who wrote this review of the Digester Corrosion sessions held by Tappi during Paper Week in New York, knows his subject from personal observation in several Southern mills.

YOUNG MAN WITH OLD RECORD OF LOOKING AT DIGESTERS

Even before the Tappi Digester Corrosion Subcommittee started its investigations and data-gathering of recent years on the costly failures and problems with modern alkaline digester linings and construction materials, M. J. (Johnnie) Osborne, who is now electrical superintendent for Bowaters Southern Paper Corp., made a tour in 1949 of Southern mills at their request to see what was going on. At this time he made the first Audigage thickness measurements.

Because of this background and his unusually broad experience with this problem, *PULP & PAPER* invited him to express his views on Paper Week reports.

Born in Florida, a graduate of Georgia Tech, 1944, he has been with AEC at Oak Ridge, on turbo-electric tankers during the war, and with Crossett Paper Mills and now Bowaters.

How Will Kraft Mills Solve their Costly Problem

... with Long-Serving Old Vessels? Or New?

By M. J. Osborne
Electrical Superintendent,
Bowaters Southern Corp.,
Calhoun, Tenn.

IN 1948, WHEN I WAS at Crossett Paper Mills, Mr. K. O. Elderkin (he is now vice president and general manager of Bowaters Southern Paper Corp.) gave me the problem of developing an instrument to measure the thickness of steel from one side only, to be used for non-destructive testing of digesters. The resulting instrument was entirely too bulky, weighing 250 lbs., and very inconvenient to use inside a digester.

A further investigation with Mr. Dwight Evans, former research engineer with Phillips Petroleum, brought out that the petroleum industry also was extremely interested in corrosion problems and this led to the development of the Audigage through use of a General Motors patent.

Crossett purchased the first Audigage in the pulp and paper industry. Our findings were disturbing and led to two digesters being operated at reduced pressure and removed from service eventually.

At the request of six other kraft mills in the South, Mr. Elderkin in 1949 sent two men, including myself, to test digesters at their mills.

Equipped with the first Audigage in this industry, digesters were tested and a quantity of process information was gathered from these mills. My report of the survey was not published. I believe that chemists and metallurgists could come to some definite conclusions on the basis of that data.

Later Tom Johnson, paper mill superintendent at Union Bag & Paper Corp., made a report on digester corrosion at their mill using the Audigage, and I assisted in a survey in another Southern mill and continued the testing program at Crossett.

Tappi Committee Starts Work

Soon after this the Tappi digester corrosion subcommittee was formed and Wayne Smith, plant engineer for Crossett, was made a member. I have watched with considerable interest the activities of this subcommittee. It acted soundly in establishing a standard test instrument, data sheet and inspection procedure for all kraft mills to follow.

But the committee and the industry then seemed to adopt the viewpoint that the solution to the prob-

lem did not lie in past practices, but in future practice through the use of stainless or special steels such as semi-killed rimming. There are some digesters in the South which have been in service for 13 years or more and from every indication will be in service for years to come. It would seem to me the industry would benefit by some knowledge of these successful digesters.

Stainless-lined and stainless-clad vessels were installed in many mills. An abundance of data was still being continuously gathered however, on digesters all over the country.

About this time Dr. Lincoln R. Thiesmeyer, president of the Pulp and Paper Research Institute of Canada, and several Canadian paper mills collected enough money to send a task force of experts to make a survey of digester corrosion in Canada. By having the same men run tests and make observations, the human element was eliminated, or at least minimized. Very soon many significant factors were uncovered. Claude Christiansen, as leader of the task force, has freely shared the findings of this group.

Canadian Work Praised

The digester corrosion papers presented at Montreal were good and

Continued on page 88

See page 96 for Mr. Osborne's comments on electrical engineering developments at Paper Week.

THE CARBON BRICK SIDE OF THE STORY

For several years a Canadian industry "task force" and a U. S. industry Tappi-organized kraft digester corrosion committee have conducted special studies and research into the very grave problem of kraft digester failures and difficulties.

Virtually exclusively, they concentrated their studies and formal reports on the performance of stainless and alloy steels and mild steels.

For the first time, the full story of the paralleling research work and performances of carbon-brick type of linings was told at Paper Week in New York.

Here is PULP & PAPER's own condensation of this presentation.



BEAUMONT THOMAS (left), Vice Pres., Stebbins Engineering & Mfg. Co., prepared and presented this paper in New York Feb. 16. He was born in South Wales, graduated from U. of West Va., has been with Stebbins 16 years. JAAKO POJRY (right), Mechanical Engineer with Watsila-Koncernen A.B., Helsinki, Finland, was much interested in this paper as his company is considering similar installations in Finland.

of Corrosion in Pulp Digesters?

... with New Improved Carbon Brick Linings?

By Beaumont Thomas
Vice Pres. in charge of
Research and Development,
Stebbins Engineering &
Manufacturing Co.

UP TO 1954, exactly 100 carbon brick linings are known to have been installed in alkaline pulp digesters on this continent (in 23 yrs.). These were in 83 digesters in 17 mills, there having been 17 replacements. (This report omits linings for prehydrolysis cooking where mortar joints and lining design are different.)

At least 13 more are scheduled to be installed in 1954. There will be about 90 in service by the end of 1954, varying in age up to 17 years, and they are in 19 mills.

The first was installed in 1931, replacing ceramic brick, and gave good service until 1948. Of 15 installations before 1940, two have lasted 15 years, one for 12½, and two are still in service after 17 years.

Only 4 carbon brick linings were placed between 1939-46. These were 5 in. thick, 4½ carbon brick and ½ in. Portland cement grout backing. Though in good condition, they were removed in 8 years by reconstruction. In 3 mills, 15 identical linings were installed in 1946 and 14 in two mills are in good condition.

Starting in 1947, 33 thinner carbon brick linings have been installed

with 2½ in. carbon face block and overall thickness of about 3 in. Of these, 12 in 4 mills are highly successful. Ten in 3 mills have been replaced and 11 in 4 mills gave trouble but are improved, some because of removal of insulation.

Uniformly excellent results have been obtained with the 3 in. lining in new shells and poorest results generally have been in old shells badly corroded.

Linings from 1946-54 have been designed with full knowledge of shell condition. While it has not been necessary to revert completely to 5 in. minimum linings, linings of 3 in. have not been recommended. Those installed in the last 18 months—a total of 32—have been 3½ to 5 in. A single 6 in. lining also was installed.

Ten are of 4½ in. carbon and ½ in. grout backing and 22 are of 2½ in. carbon and 1 to 2½ in. grout backing. At 10 of the 11 mills, no service has been required. A serious exception at the 11th duplicates previous thinner lining failure, not fully explained as yet.

The only available mortar joint sufficiently resistant to alkaline conditions is Portland cement and, properly formulated, it can give 12 to 15 yrs. service. The best linings have been free of spalling or "fall-outs." All linings have afforded pro-

tection to shells during service life and no steel corrosion has occurred in brick lined digesters. In sulfite, masonry linings have given over 50 years shell protection and it is assumed even better records can be obtained in kraft, where the major problem of these linings is not corrosion but lining stability.

Materials are being developed for better service. Much experimental work is now done, and it is believed linings of real benefit to the industry will result.

Lawrence College's New President Is Installed

Youngest president in 107 year history of Lawrence College, home of the Institute of Paper Chemistry graduate school, in Appleton, Wis., 32-year-old Douglas Maitland Knight, was installed in office Feb. 25. Two weeks earlier he attended the Institute Trustees annual New York meeting. He came within two years of being the youngest college president in U.S. history (youngest was R. M. Hutchins, when he headed U. of Chicago).

Cola G. Parker, president of the College board of trustees and chairman of Kimberly-Clark, presented the college charter to Dr. Knight, former Yale professor.

CORROSION REVIEW

Continued from page 86

the discussion lively. There were, however, certain comparisons made that are debatable. (See PULP & PAPER's own summary of that report, page 94, March issue. Mr. Christiansen cited primary and secondary causes of corrosion and five remedial measures.)

The Canadians are coming up with significant results. I was impressed with the report by Sol Gertzman, metallurgist of this group in the Montreal meeting and the investigations he is starting on solid non-metallic inclusions in steels or the "wrought iron theory" of corrosion resistance.

At the discussion meeting in Montreal, I mentioned the opinion that we should have samples taken from vessels which have not corroded similar to the work that is being done by the Canadian group. I mentioned one digester that I knew contained slag and others whose digesters are not corroding at a rapid rate. The digesters of Brunswick Pulp and Paper and St. Joe Paper are in good shape. Those at St. Joe are practically original thickness.

I believe that the American industries have spent just as much money in their investigations as the Canadians; however, they have spent it as individual mills.

The New York Developments

At the New York meeting there were four excellent papers read.

There seemed to be two general significant conclusions that were reached. The outstanding cause of primary corrosion is sodium thiosulfate. A formula was presented which showed the relative corrosivity of concentrations of sodium thiosulfate, sodium sulfite, and sodium hydroxide.

To prevent concentrations of sodium thiosulfate, three methods were suggested:

- (1) Use steam nozzles on the smelt to the dissolving tanks.
- (2) Keep all tanks in the liquor system closed.
- (3) Use no bubbler type of level instruments.

The outstanding cause of secondary corrosion seems to involve the procedure for chip and liquor filling. If the chips peak on one side of the digester there will be "hot plate boiling" and corrosion on the other side from the action of liquor and hot steel.

Corrosion is an electrical phenomenon and cathodic protection or



Prominent In Corrosion Studies

Left to right: HERBERT O. TEEPLE, International Nickel Co., Secy of Tappi's Digester Corrosion Sub-Committee; JAMES R. LIENTZ, Union Bag & Paper Corp., Chairman of Tappi Chem. Engineering Committee and author of progress report on kraft digester corrosion on page 48, PULP & PAPER Dec. 1953; NICHOLAS SHOUMATOFF, West Va.

P & P, Chairman of Corrosion Sub-Committee; S. A. GERTZMAN, Canadian government metallurgist whose tour of Canadian kraft mills and collection of 42 corrosion samples was basis for Canadian report, and C. B. CHRISTIANSEN, Canadian task force leader, who made report of field investigation at New York meeting.

protection by other scale-forming means would be mitigative measures for digester corrosion.

There was a laboratory paper presented on the subject of cathodic protection of steels in cooking liquors. It was of note that if the current density is too high that the protective film is destroyed.

I am waiting to see the results of full scale experiments in cathodic protection at Penobscot Chemical Fibre Co., Great Works, Maine.

Importance of Comparisons

As to comparisons that the Armour Foundations have made, it is my opinion that it is not too important to compare average penetrations or the averages in a vertical or horizontal direction. I feel that the most important comparison that should be made on a mild steel digester would be the maximum rate of penetration—this maximum being the center of a reasonably significant area. It is in this manner that Frank Speller, the authority on corrosion with U. S. Steel, makes comparisons of rates of penetrations. It is the minimum thickness of the digester or the maximum rate of penetration which will determine whether a digester is removed from service.

I feel that comparing average rate of penetration of the various stainless steels to the average rate of penetration for the mild steel, either rimming or ordinary, is the same as comparing sheep and apples since it is impractical to build a digester out of solid stainless or special alloys.

In the case of comparisons of the stainless-lined or stainless-clad vessels, I believe that the comparison should be made between years of digester life or the length of time that elapsed before the digester was removed from service. There may be

a comparison that could be made between stainless steel and mild steel by properly weighing the penetration of the 10% cladding of lining to the penetration that would be permitted on a mild steel digester—the original thickness of this vessel to be about 2 in. If this is done then both maximum penetrations and the average penetrations could be used. When the lining or cladding has been penetrated then the digester, for all practical purposes, is no longer of value.

Orell Heads U. S. Bureau Serving Pulp and Paper

Bernard Orell, of Weyerhaeuser Timber Co. sales, St. Paul, Minn., has been loaned to the government to be director of the Forest Products Division of the Bureau of Defense and Services Administration in Washington, D.C., which includes services for the pulp and paper industry.

Mr. Orell was a former Washington State chief forester.

He was sworn in Feb. 15, succeeding John Davis, who then returned to his post with The Mead Corp., Chillicothe, O., as assistant to George Pringle, vice president of Mead's white paper operations.

Cochrane Hot Zeolite Plant Installed at Mill

Bird & Son, Inc. is converting water treatment for its power plant at East Walpole, Mass., mill from a hot phosphate system to a Cochrane hot zeolite system. Rust Engineering Co. is designer-engineer. Two booster pumps from Warren Steam Pump Co. and three 6-ft. diameter Cochrane zeolite water softeners and various Cochrane tanks are included.

NOW ON THE NEW
CASE
DIESEL....

Mighty "backbone" for the powerful Harrison Loader Crane is the new "520" Case Diesel tractor. Built for strength and rugged endurance, it has an unusually heavy 7-bearing crankshaft. Touch of a button starts this Case Diesel. Single-plunger injection pump feeds fuel evenly to all six cylinders. Six-point filtering system assures clean fuel. "Powrcel" controlled combustion provides smooth, quiet power and clean burning at all speeds and loads. Power Steering makes maneuvering quick and easy in crowded yards.

THE HARRISON *LOADER CRANE*



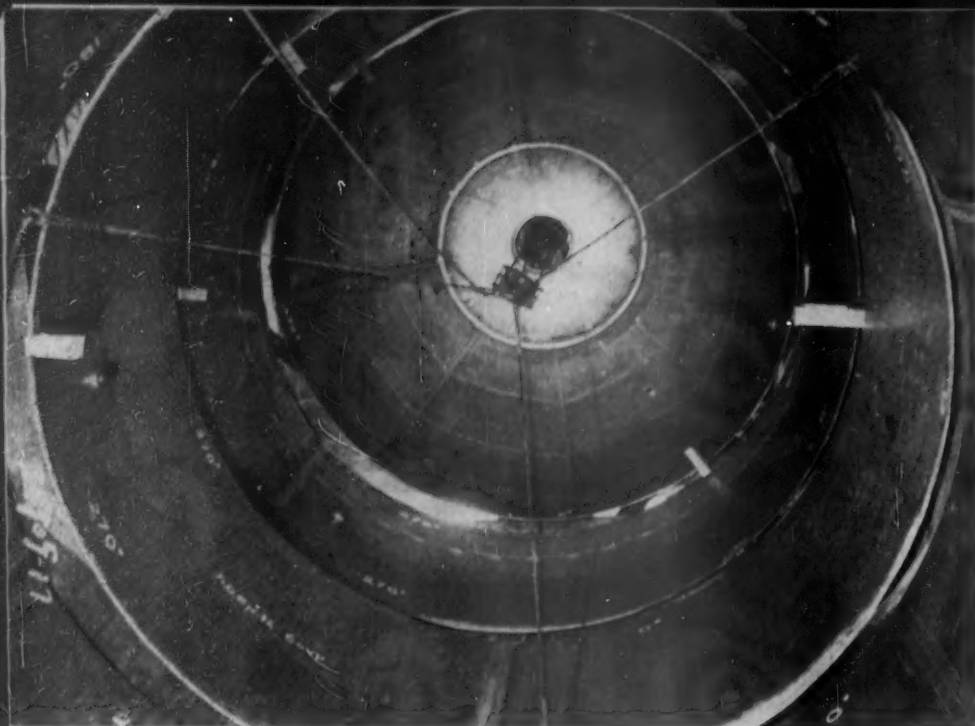
NEW SAVINGS IN HANDLING PULPWOOD

You can do any pulpwood loading, stockpiling, or unloading job . . . and do it on ordinary dirt yards . . . with the Harrison Loader Crane. Big tires . . . 18.00 x 26, 10-ply . . . give great flotation and splendid stability. Wherever your trucks can go, the Harrison Loader Crane can go. Vickers Hydraulic Controls, valves and pumps are used throughout. Automatic counter weight, hydraulically operated, moves back as load is lifted . . . transmits load stresses to rear axle . . . makes operation easy . . . reduces strains caused by "rocking." Hinge-type boom with extra long cylinders gives instant load control at any height . . . permits spotting load at full arm depth . . . allows "far-side" loading of gondolas. Complete weight about 24,000 lbs.

For further information write or call—

HARRISON MANUFACTURING CO.

Dept. A, P. O. Box 682, Columbia, South Carolina. Phone 2-9510



ALLOY LINING IN DIGESTER HEAD AT FERNANDINA, FLA.

PICTURE SHOWING INSIDE SURFACE of a Smithlined top head and three shell section rings being positioned in the digester house prior to welding of circumferential field seams. This has been referred to as the world's largest alloy lined digester and it is in the Rayonier purified market woodpulp mill at Fernandina, Fla., where the sulfite process is uniquely used on Southern woods.

New Data Revealed on Kraft Digesters

By Merrill A. Scheil

Director of Metallurgical Research, A. O. Smith Corp.
(A new report written especially for PULP & PAPER)

SOME NEW DATA representing four years of exposure of various types of stainless steels and alloys in the vapor zone of a regular kraft digester under generally severe operating conditions has shed new light on their potential performance in digester service.

As is well known by everyone who has been following the progress of the representative and able Tappi digester corrosion subcommittee, its recent reports showed very little advantage for alloy clad or lined equipment over mild or ordinary carbon steels. But perhaps the most significant fact about these reports to date was the admission of their incompleteness and that so far they did not adequately reflect the service life of alloy lined digesters.

One of the policies of A. O. Smith Corp. in its many years of intensive research and work in digester construction is that it has not been committed to use of any material or process. It still will build almost any kind of digester anyone wants, and use any alloy or steel of any make desired. With this background, perhaps some of the conclusions we have reached may have more meaning than might otherwise be the case.

One of these conclusions is that it is essential to test alloys in the location of severest corrosion, as we did in the recent four year tests of various samples. We have found the

MERRILL A. SCHEIL specially prepared this article for PULP & PAPER. He is member Tappi corrosion committee, and directs metals research for A. O. Smith.



area of severest corrosion to be, in general, at or just above the chip line in most of the kraft digesters we have examined.

We also have confirmed from a number of years of testing that samples should be placed on the walls of the digesters and not projecting out from the walls as we ourselves frequently placed them.

We have now the record for five samples which were placed on the carbon steel wall of this kraft digester mentioned at the outset.

It should be explained that this digester was Smithlined with Type 347 stainless steel and one of the samples was of the same material.

There was a noticeable attack at the chip line before the investigation began and in order to study materials that would resist such attack, the corrosion specimens were placed in exposure in this chip line area.

The corrosion rates recorded are actual micrometer thickness measurements obtained on quite large specimens. Here is the record, under severe conditions of operation:

Sample Of Steel	Corrosion Rate —Inches Per Year	Actual Thinning —Inches In 4 Yrs.
Type 347 Stainless	0.0180	0.0720
Type 316L Stainless	0.0090	0.0360
Inconel	0.0040	0.0160
Carpenter No. 20	0.0020	0.0080
Hastelloy Alloy F	0.0018	0.0070

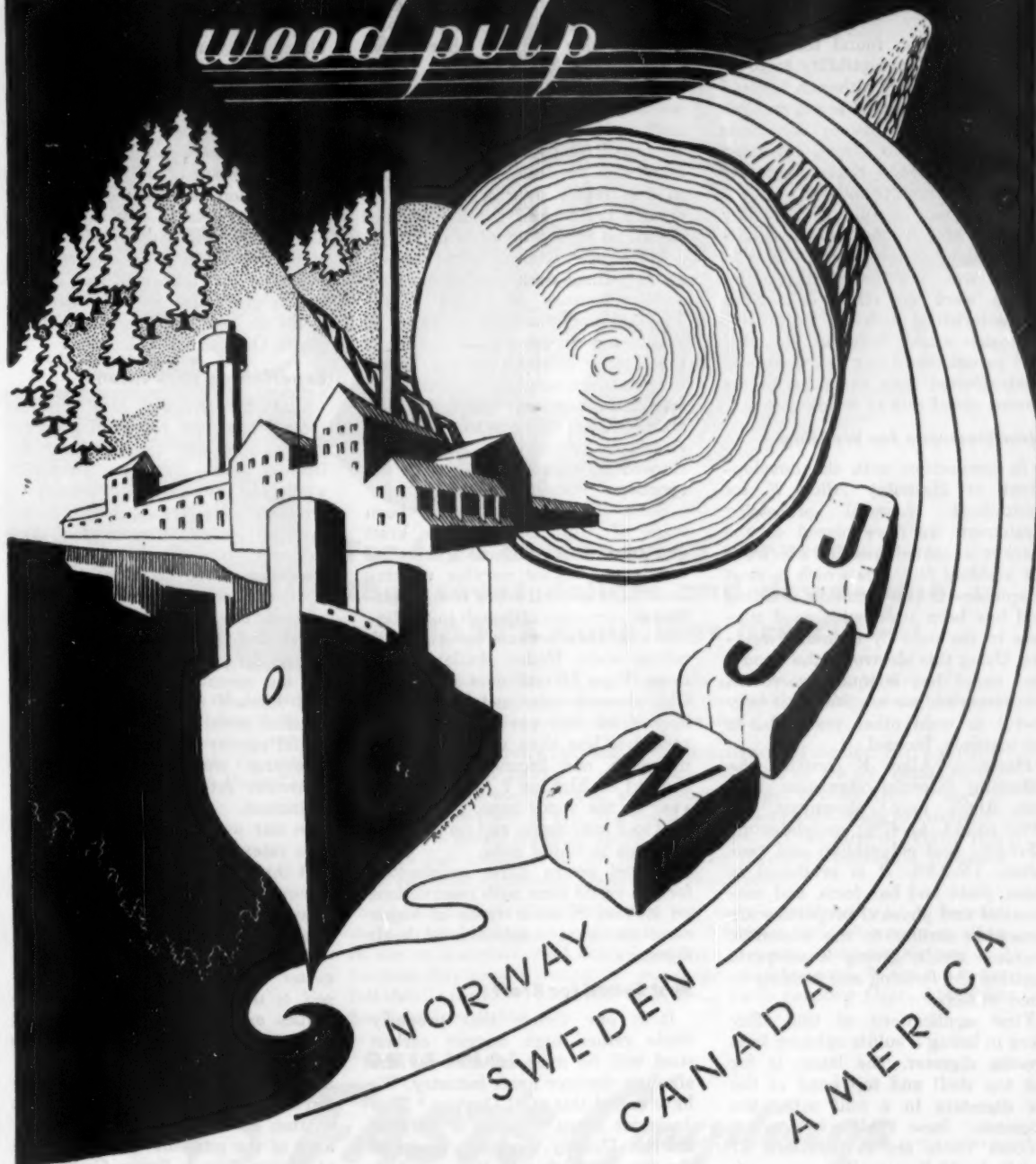
It is of interest that the same heat and sheet of Inconel was used to strip-line the top manway as was used for the Inconel sample at the chip line. The Inconel in the top manway showed absolutely no corrosion after four years service. This, we believe, emphasizes the need for testing in locations of severest corrosion.

We have recently gone into use of Hastelloy Alloy F as a new lining material both for the alkaline sulfate and alkaline-acid duplex process as well as for the acid sulfite process. We have had this alloy in service in the vapor phase of both alkaline and acid digesters and it looks very much better than any modern materials we have exposed in that area heretofore.

It was apparent from our most recent four-year report on the samples listed above that we are justified in putting our hopes for an all-

JOHNSEN JORGENSEN & WETTRE LTD.

wood pulp



26, FARRINGTON STREET, LONDON E. C. 4

TELEGRAMS: "WETTRE, LONDON."

EDINBURGH

MANCHESTER

purpose metal into this alloy. We have seen it perform under some very severe conditions where heavy calcium sulfate scale is involved and we have yet to find that it is susceptible to deep pitting such as would be the case with other stainless alloys.

We have also found that it has practically no susceptibility to stress corrosion cracking although I would hesitate to say that it is not possible under the most severe conditions for this alloy to stress corrosion crack. However, that possibility seems very remote indeed.

One of our samples of Hastelloy Alloy F was in the welded condition and after four years the weld metal was practically untouched. There were no other deleterious characteristics such as knife line corrosion attack between the weld and parent metal nor was there any heat-affected zone corrosion in the parent metal due to welding.

New Electrode for Welding

In connection with the development of Hastelloy Alloy F for Smithlined chemical processing equipment we have placed on the market a coated metallic electrode for welding purposes which is most adaptable to all position welding and has been used with good success in the field by ordinary welders. Using this electrode, the deposited metal has adequate corrosion resistance and we are finding it very useful to weld other materials, as for instance, Inconel.

Hastelloy Alloy F contains the following essential elements: carbon, 0.08% max.; chromium, 21-23%; nickel, 44-47%; molybdenum, 5.5-7.5%; and columbium and tantalum, 1.5-2.5%. It is produced in sheet, plate and bar form, and mechanical and physical properties are somewhat similar to the austenitic stainless steels, giving it adequate ductility for forming and welding in lined vessels.

First applications of this alloy were in lining a sulfite calcium base process digester. The latest is for the top shell and top head of the six digesters in a mill using the magnesia base sulfite recovery process. These are in digesters, 17 ft. I.D. by 58 ft. overall.

Four Years' Service in West

Alloy F has been subjected to four years' service in the top vapor zone of a Pacific Northwest sulfite digester, using strong cooking liquor, with about 10% total SO_2 , with excellent results. The F alloy was selected after a year's testing with different alloys to combat a pitting

attack taking place on Type 316L spot-welded Smithlining due to a product deposit condition. The latter began showing pitting after one year. Strips of 4-in. wide alloy, $\frac{7}{16}$ in. thick, were applied on the stainless steel Smithlining by butt-welding the strips in a herringbone pattern. In this manner, short down time periods were used to repair the areas of severe attack. The welding was done entirely by mill staff and each area strip-lined was air tested for tightness before going on stream. No leaks have developed in this repair over a considerable service period and the F alloy has shown no pitting or other corrosion.

More recently the F alloy was also strip-lined over the bottom cone section because of pitting in the T316L lining resulting from scale developing in the liquid portion of the digester. In about one year's time the scale, principally calcium sulfate, had extensively pitted the 316L stainless steel lining in the cone. The Hastelloy Alloy F strip-lining showed no corrosion at recent inspection.

Some severe tests have been made of Alloy F samples in kraft digesters with various species of woods and under varying cooking conditions and all were free of pitting or corrosion although in the liquid zone they became covered with calcite scale. Under similar conditions, Type 347 stainless (18-8 plus Cb) showed micrometer thickness loss of 14 mils per year in vapor zone but less than one mil in liquid zone, and Inconel Smithlining showed as high as 7 to 8 mils per year in the vapor zone, but as low as 0 to 2 mils there, and no measurable loss in liquid zone.

Inconel seems quite satisfactory for the liquid zone with reservations on its use in some types of vapor zone corrosion conditions of kraft digesters.

Best Suited for Kraft

It is our theory that properly made rather high oxygen carbon steel will be most suitable for the alkaline digester kraft industry. We have called this steel Oxyrim.* This does not mean oxygen is only in the rim. Usually, oxygen is lower in the rim and higher in the core, but, by the process that is being used for this steel, oxygen is quite uniform throughout the entire rolled cross section of plates.

We do not depend upon the rim for any special corrosion resisting properties and this must be true since the rim on plate steels of 2 in. and over is not more than $\frac{1}{4}$ to $\frac{3}{8}$

in. thick. If the rim was depended upon for corrosion protection there would obviously be no point in designing digesters for a 1 to $1\frac{1}{4}$ in. corrosion allowance.

In our own tests of the Smith Oxyrim steel, a digester constructed of this material has been in service about two years and at a recent inspection was, in the opinion of an experienced digester inspector, better corrosion-wise than other carbon steel digesters in the same mill.

Because there has been considerable discussion of the isolated cases of corrosion rates for different alloys and steels as reported at the Tappi corrosion subcommittee sessions, we think it is important to point out that reports of lack of corrosion resistance of new rimming steels do not take into account the Smith Oxyrim steel.

Experiences With Inconel

Our experience also differs sharply with the report of a corrosion rate of 29 mils per year for Inconel lined digesters. This rate would indicate only a four-year life for these digesters. Our own measurements, made on samples of liner trepanned from the digester at various intervals, show an average rate of about $\frac{1}{6}$ the reported 29 mils.

Since the report was on an Inconel clad digester in the South in service for just two years, and since the top operations executive of the mill himself said he was entirely satisfied with their performance, it would appear that the technique of obtaining and reporting reliable corrosion rates needs careful examination.

In our own calculation of corrosion rates we rely primarily on direct thickness measurement of liner removed from the digester in all cases when other measurements indicated excessive corrosion.

We are aware that the Tappi Digester Corrosion Subcommittee itself is not satisfied with its techniques and is continually seeking ways to improve them. The reports which have been published on committee work, as reported in PULP & PAPER last December in the article written by James R. Lientz, manager of the pulp and paper division at Union Bag & Paper Corp., and previous articles in that magazine by Mr. Lientz and Francis Flynn, of Crown Zellerbach Corp., have been constructive and informative.

(Editor's note—Hastelloy Alloy F, mentioned in the above article, was developed in the Union Carbide & Carbon Research Laboratories Inc., by its Haynes Stellite division, with assistance of A. O. Smith Corp.)

*Trademark



This Big Battery of Jordan-type Fast's Couplings has given long, trouble-free service at the Savannah, Ga. mill of the Union Bag & Paper Co.

For free engineering service that saves dollars and down-time... **FAST'S Couplings are FIRST!**

When you specify Fast's Couplings, you get the benefit of Koppers *free engineering service* . . . your assurance of the right coupling for any job and the right solutions to tough coupling problems!

It's the kind of service that led to the installation of the first Fast's Jordan-type Coupling in 1922 . . . a coupling that's *still on the job*, although the original Jordan machine was worn out long ago. It's the kind of service that leads one plant to say "Get the drawings and send them to Koppers" whenever a tough coupling application arises. It's the kind of service that enabled one customer to cut his coupling inventory because a Koppers sales engineer eliminated unnecessary duplications.

In addition, Fast's Couplings give you *rugged construction* . . . because their original design has been maintained without basic change or sacrifice in size or materials. And Fast's Couplings give you *lowest cost per year* . . . because they usually outlast the equipment they connect. Write today for full details to: KOPPERS COMPANY, INC., *Fast's Coupling Dept.*, 274 Scott St., Baltimore 3, Md.



THE ORIGINAL

FAST'S Couplings

METAL PRODUCTS DIVISION • KOPPERS COMPANY, INC. • BALTIMORE, MD. This Koppers Division also supplies industry with American Hammered Industrial Piston and Sealing Rings, Koppers-Elex Electrostatic Precipitators, Aeromaster Fans and Gas Apparatus.

Engineered Products Sold with Service

KOPPERS COMPANY, INC., *Fast's Coupling Dept.*, 274 Scott St., Baltimore 3, Md.
Gentlemen: Send me a Fast's Catalog giving detailed descriptions, engineering drawings, capacity tables and photographs.

Name

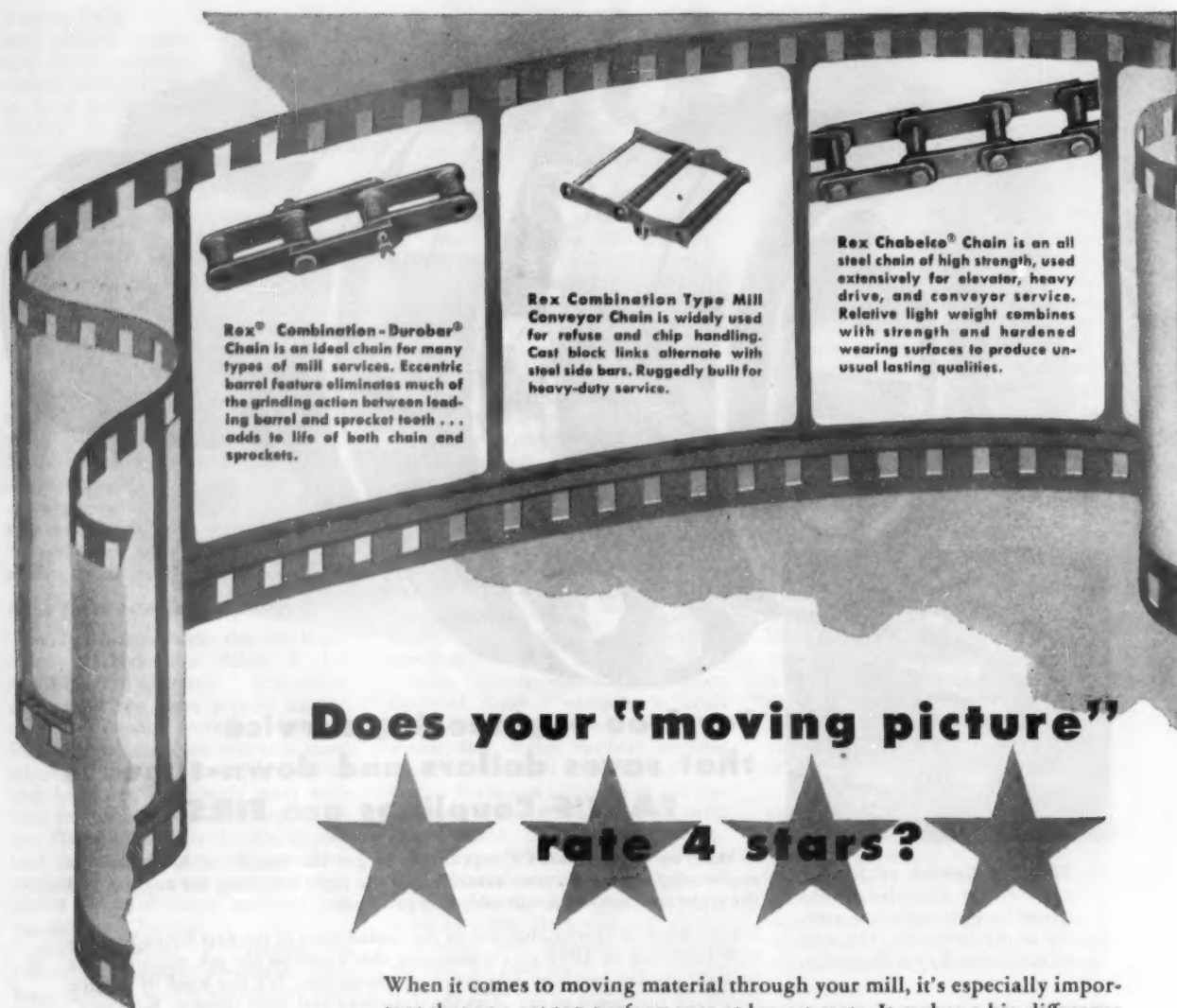
Company

Address

City

Zone

State

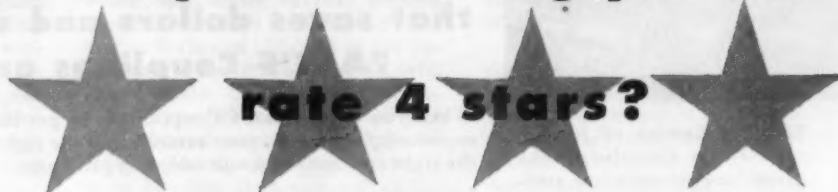


Rex® Combination-Durobar® Chain is an ideal chain for many types of mill services. Eccentric barrel feature eliminates much of the grinding action between leading barrel and sprocket teeth... adds to life of both chain and sprockets.

Rex Combination Type Mill Conveyor Chain is widely used for refuse and chip handling. Cast block links alternate with steel side bars. Ruggedly built for heavy-duty service.

Rex Chabelco® Chain is an all steel chain of high strength, used extensively for elevator, heavy drive, and conveyor service. Relative light weight combines with strength and hardened wearing surfaces to produce unusual lasting qualities.

Does your "moving picture"



When it comes to moving material through your mill, it's especially important that you get top performance at lowest costs. It makes a big difference in that vital matter of profit or loss. That's why it pays you to investigate the Chain Belt line of materials handling equipment.

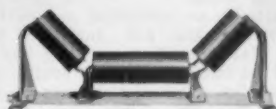
Whether your "moving picture" calls for chains and sprockets, belt conveyors, or complete bucket elevators, you'll find in the complete Chain Belt line the exact equipment that best fits your requirements for low-cost materials handling.

Rex Engineers are well qualified by years of experience to help you with your design, selection and replacement problems. They are backed by equipment which has been recognized as "tops" in quality for over 60 years. Call your nearest branch office today or write for more information on Rex Equipment for the Forest Products Industries. Chain Belt Company, 4691 W. Greenfield Ave., Milwaukee 1, Wis.

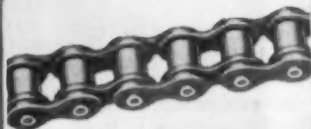


Chain

ATLANTA • BALTIMORE • BIRMINGHAM • BOSTON
BUFFALO • CHICAGO • CINCINNATI • CLEVELAND • DALLAS
DENVER • DETROIT • EL PASO • HOUSTON
INDIANAPOLIS • JACKSONVILLE • KANSAS CITY
LOS ANGELES • LOUISVILLE
Distributors in principal cities
Export Offices:



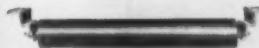
Rex Wood Chip Idlers are sloped to a steep 45° angle to greatly increase belt capacity. Chips can be piled higher and loaded closer to the belt edge without fear of spillage. Have same long-life design features as Rex standard idlers.



Baldwin-Rex® Roller Chain is a high strength, precision-built, finished steel chain widely used in drive applications. Especially suitable where high speeds are encountered. Available in a complete line from 1/4" to 2 1/2" pitch.



Rex Belt Idlers are the backbone of all types of belt conveyors. Triple labyrinth grease seal assures longer life and low maintenance costs . . . guards against costly "freeze-ups." Available in a wide range of designs and sizes to suit every application.



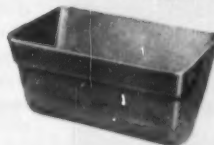
Rex Return Idlers are of the dead shaft type and are of the same rugged construction as Rex Troughing Idlers. Positive grease seal assures smooth operation through years of continuous service. Rex also makes flat belt idlers, impact idlers, self-aligning idlers and spiral return idlers.



Rex Temperim® Sprockets have specially hardened rims with extremely uniform tooth contours. They will not wear rapidly even under severely abrasive conditions. Thus, they help to maintain chain pitch and prolong chain life.



Rex Flat Spray Nozzles are ideal for cleaning logs as they emerge from woodyard or log pond. Their hard-hitting, knife-like sprays of water effectively remove sand, gravel, dirt and grit from logs. Special design permits maximum impact value with low water consumption.



Rex Bucket Elevators are widely used for elevating wood chips, refuse and similar material. All major components . . . buckets, chains, sprockets, housing, etc. . . are manufactured by Chain Belt Co., assuring you a uniform, reliable, easy-to-maintain unit.

Belt COMPANY OF MILWAUKEE

MIDLAND, TEXAS • MILWAUKEE • MINNEAPOLIS
NEW YORK • PHILADELPHIA • PITTSBURGH • PORTLAND, OREGON
SPRINGFIELD, MASS. • ST. LOUIS • SALT LAKE CITY
SAN FRANCISCO • SEATTLE • TULSA • WORCESTER
in the United States and abroad

Milwaukee and 19 Rector Street, New York City

PULP & PAPER — April 1954

PRINTED IN U.S.A.

Why Not Instruments Committee? Southland Scanner Improves Process

By M. J. Osborne

Electrical Supt., Bowater Southern Paper Corp.
Member, Tappi Electrical Engineering Committee

AN ELECTRICAL engineering committee meeting was held by Chairman Ray W. Foster of Champion Paper & Fibre Co., Canton, N. C., after the general engineering committee meeting at the Tappi convention in New York in February.

The electrical committee reviewed a report, "Corrosion of Cable Armors in Paper Mills," and agreed to publish it as a matter of general interest to electrical men and others in the paper industry.

The report gives the results of three years study and tests of cable

armors at Champion, Canton, N. C., (sulfate mill), and Hammermill Paper Co., Erie, Pa. (sulfite).

It contains an evaluation of the corrosion resistance qualities of various metals used as cable armors. The tests were made using four racks of metal samples. Each rack contained 13 metal specimens and four galvanic couples made up of combinations of the 13 metals. All engineers who select metals for exposure to paper mill atmospheres will find this report a helpful guide and reference.

The subcommittee work discussed included "Application and Design Characteristics of A.C. Motor Control" and "Chipper Power Requirements."

Mr. Foster appointed C. J. Meloun as electrical engineering committee representative on the data sheet committee. Mr. Meloun will prepare a data sheet for that really monumental work, *Cable Report—Project No. 369*, done by a committee headed by Al Mortenson, St. Regis, Pensacola.

Eight men were present at the chipper subcommittee meeting held at the new Tappi Headquarters—this writer presiding. The work for the coming months and the October report were discussed. Another subcommittee meeting was scheduled for June. It is sincerely hoped that all mills participating in this subcommittee project will make an extra effort to supply missing data requested by the chairman by early April. The only way this committee can get a significant quantity of data is for the mills to cooperate with chipper tests. We hope that this work will develop tables representing enough data so that mill engineers can use with confidence the nomograms we have prepared.

Recommends Instrument Committee

I think that an instrument engineering committee or subcommittee should be created. There was much at the New York meeting to interest instrument and electrical engineers. Some instrumentation papers were grouped under the paper making committee.

The walls of the convention halls were covered with various forms of

Osborne Again Reviews Meeting For PULP & PAPER

Author of this review of electrical engineering developments at Paper Week in New York in late February, written especially for Pulp & Paper, also wrote a commentary on progress of research into alkaline digester corrosion which appears elsewhere in this issue. He was a pioneer corrosion investigator for the Southern pulp and paper mills.

His articles on electrical engineering developments are familiar to PULP & PAPER readers as they have followed several industry meetings. His last was after the Engineering session in Montreal in late 1953 (page 44 Dec. 1953 issue).

His career in electrical engineering, with ATC at Oak Ridge and two leading Southern mills, qualifies him eminently for writing these interpretations.

The opinions expressed are his own.

Beta ray basis weight or profile sheet gauges.

The most interesting paper on this subject was the "Weight Profile Measurement of Paper and Machine Clothing with the Tracerlab Beta Ray Scanner" by James Sadtler of Southland Paper Mills.

This instrument (see pictures) showed management that there were cyclic sheet variations of such a magnitude that their gravity type headbox should be replaced. A Beloit pressure headbox with cross flow distributor was purchased and eliminated cyclic sheet variations.

An across-the-sheet variation was corrected by reducing the crown on the press rolls from 0.201 in. to 0.080 in. There was also 15% more wear in the center of the Fourdrinier wire so the crown of the lump breaker roll was reduced. The gauge helped bring about corrections which resulted in longer clothing life, longer wire life, a better headbox, and better paper.

Moynihan, New Supt. For Bowater, Has Moved!

James Moynihan, new groundwood superintendent, Bowaters Southern Paper Corp. mill soon to start up in Calhoun, Tenn., has been around!

He was groundwood supt. twice for Bowaters in Newfoundland, in the late '30's; again in late '40's.

He started Southland Paper's groundwood mill in Texas. He went years ago to San Rafael Paper, biggest company in Mexico, to do the same. He was on loan then from Maine Seaboard Paper Co. That isn't all—besides long Maine experience, there's 15 years with Finch, Pruyn in New York. Most recently he was with Coosa River in the South as groundwood supt.



**PULP & PAPER'S OWN PICTURE
OF THE SOUTHLAND SCANNER**

MINNEAPOLIS HONEYWELL provided recording equipment for this Tracerlab Beta ray gauge newsprint scanner which Mr. Osborne reports helped Southland Mills to cut operation costs and improve product.



SAMPLES OF SCANNER PROFILES

PULP & PAPER took these views to illustrate important paper given in New York. A 10 in. strip from 220 in. newsprint roll is removed every 20 min. Fed into scanner, any weight variation is shown in proportion of 1 in per 4 lbs. basis wght. Technicians cut chart along irregular course of recording pen, producing these profiles of variations. Sheets are fixed to paperboard supports and grooves hold 3 days of samples.



Specify **HERCULES**

Brand Corn Starch

...the only starch that gives
you these 3 advantages:

HERCULES CORN STARCH IS A "NATURAL" FOR SURFACE SIZING OF QUALITY PAPERS

- Greater clarity
- Greater strength
- Uniformity of film
- Superior film continuity
- Lower viscosities
- Increased adhesiveness
- Lower congealing rate
- Excellent color

Service to the Industry... Take advantage of our free technological service. Our field and laboratory experts welcome an opportunity to help you solve your problems. Write today...

1. Dependable quality... Hercules brand corn starches are the only starches whose production is under complete automatic instrument control from start to finish. You are assured of a constant supply of Hercules.

2. Meet all specifications. They are used extensively in the beater, in off-the-machine coating and in calender sizing. They can be modified to suit most equipment.

3. Greater mill efficiency with Hercules... Hercules Starches insure uniformity, better pick test, and high Mullen Test. Production is speeded, and the quality is improved with Hercules Brand Starches.

Corn Products Refining Co.

17 Battery Place, New York 4, N.Y.

Tappi Program Reveals Changing Industry

Written Especially for PULP & PAPER—Review of New York Papers

By George H. McGregor

Veteran Tappi Group Leader at Many PAPER WEEKS

Affiliated with Minnesota & Ontario Paper Co.

Because of his broad experience in the industry and in Tappi activities, PULP & PAPER again invited Mr. McGregor to review the 1954 New York Papers. He also served as Moderator of a panel on acid pulping and also gave a paper himself on sulfite pulping of hardwoods and highly resinous softwoods.

ONCE AGAIN a review of the annual Tappi program indicates trends in present and future technology of pulp and paper manufacture. This presentation and interchange of technological information contributes to an increasing rate of progress within the industry.

We must recognize that a definite transition is taking place in the individual's place within the industry. The pulp and paper maker alone is not as important as he was. Pulp cooking and paper making today is largely a composite effort of operator, production management, sales, and technical control. It is true that the pulp and paper industry probably offers greater opportunity than most any other industry for development of individual knowledge and initiative. Such might be clearly illustrated by the simple fact that, for instance, we may make a so-called common grade of sulfite or kraft pulp, or a particular printing and writing paper to conform to certain standards. We can be assured each organization will make

the same product according to a slight variation in technology.

Ever changing uses and use requirements for the products of cellulose continually dictate a necessity for alertness, education, cooperation. The annual Tappi programs are successful application of these principles.

In view of the logical policy of holding area meetings relating to interesting subjects such as alkaline pulping, engineering, paper coating, and fibrous agricultural residues, certain limitations are placed on the annual meeting.



GEORGE MCGREGOR (at right) is shown here at Paper Week 1954, introducing NATE MALCOVE (left), Technical Supt. of Northern Paper Mills, Marathon subsidiary, to a large Tappi audience. Mr. McGregor was serving as Moderator of the Acid Pulping Panel and Mr. Malcove discussed stream problems.

PAPER MAKING—Better Glass Fiber—New Sizing

PAPERS PRESENTED this year in New York relating to paper making primarily dealt with properties of the finished product rather than engineering developments in machine design or operation. Cylinder machine discussions were limited to reviews of the smoothness of paperboard.

In Fourdrinier paper making, consideration was given to the important subject of sheet weight control by means of the Beta ray scanner or gauge. Undoubtedly, we will be hearing more and more concerning the development and application of this interesting method of control of basis weight, a most important specification in paper manufacture. According to one paper pre-

sented, the Tracerlab Beta ray scanner "operates on the principle that a sheet of material moving between a source of beta radiation and a radiation detector will absorb an amount of radiation proportional to the weight per unit area of the sheet. An electronic recorder is used to translate results into graphic form."

An informative paper was on an experimental study of factors involved in manufacture of paper yarn. Factors such as twist, traveler weight, feed roller design, moisture pickup, surface active agents, etc., involved in the manufacture of paper yarn were investigated.

A review was given of the important subject of consistency regulator installations. Probably no variable should be in closer control for successful manufacture of uniform paper products.

In a presentation on the subject of glass fiber paper, "results indicate a material increase in tensile strength of paper made entirely of glass fibers by control of the pH value and certain changes in mechanical handling of the fiber in the mill. Beating is conducted at a temperature of 85° F. and pH adjusted to 3.5 or less with sulfuric acid." We should hear more on the subject of all glass fiber and glass-wood fiber mixtures.

A New Sizing Is Presented

Factors relating to paper sizing were covered in three papers. One described a new sizing agent: "A salt of hydrophobic polyfunctional

HIGHLIGHTS—AN EDITOR'S NOTE

Here are some of the new technical advancements mentioned or discussed by Mr. McGregor:

(Editor's note—In a few cases, where identity of a manufacturer or supplier might be of interest to readers we have named them here. Further reference can be easily found in the article).

Important advances in high yield pulping.

Some new stages for bleaching kraft.

Comparisons of new chlorine dioxide processes.

A new sizing agent brought out by American Cyanamid.

How to best use DeZurik consistency regulators.

Interesting study of sizing by Hercules Powder Co.

Tracerlab Beta ray scanner with Honeywell recorder.

Recommended lime kiln specifications by Allis-Chalmers.

Nalco prevention for condensate corrosion.

Fibreboard's high humidity corrugated containers.

Ideal pulping procedure for chemical conversion.

Other Tappi highlights described in other articles in this issue.

Again!

ST. REGIS

PAPER

INSTALLS

^{THE}AIRVEYOR_®

When St. Regis Paper Company designed and built its new kraft mill in Jacksonville, Florida, it selected and installed the Airveyor for handling mill-supply chemicals. Three systems are in use for conveying lime and salt cake for various functions in the mill. This now makes a total of seven Airveyor systems St. Regis has installed in four of its plants.

St. Regis has learned from experience that the Airveyor is engineered and built for superior performance in the pulp and paper industry, as have many others who have continued to purchase duplicate systems after initial installations have proved their worth.

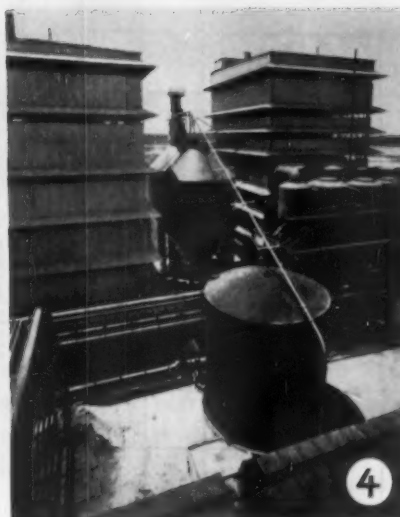
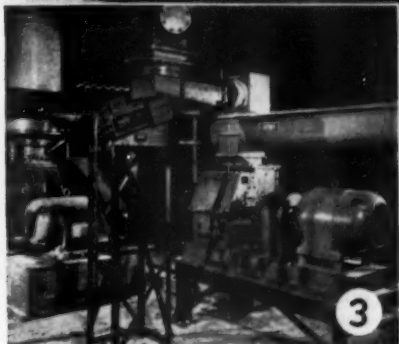
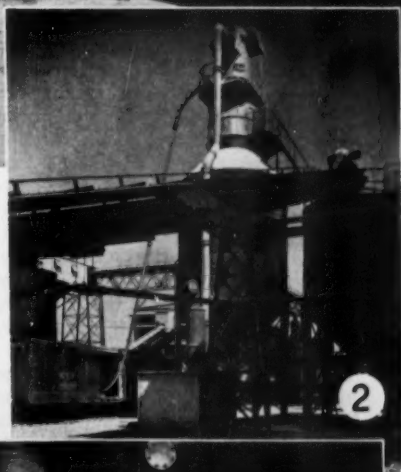
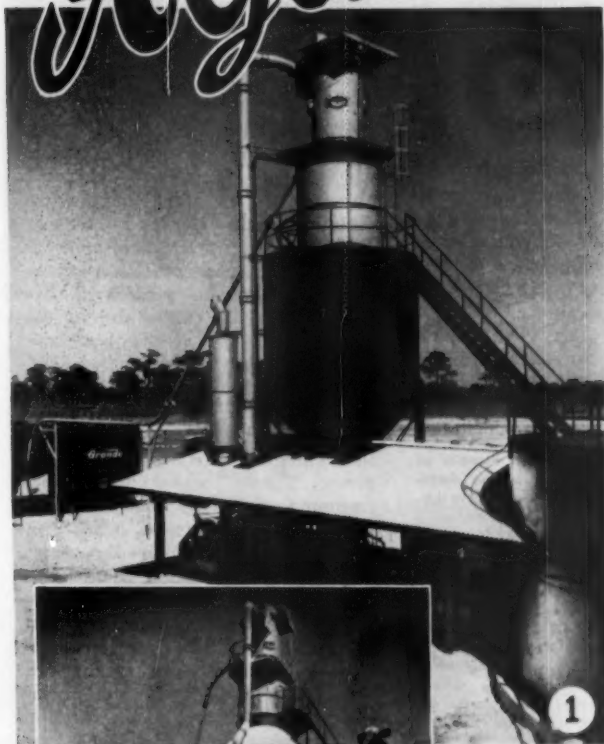
If you handle lime, soda ash, salt cake, starch, clays, and have an unloading or in-plant problem, why not take advantage of Fuller's 27 years of experience in the field of pneumatic conveying. A study of your conveying system will cost you nothing. Write today for complete information.

FULLER COMPANY

Catasauqua, Penna.

Branch Offices

Chicago • San Francisco • Los Angeles • Seattle • Birmingham



1

Unloading pebble lime from cars to storage bin at rate of 10 tons an hour, for water-treatment plant.

2

Unloading pebble lime from cars at rate of 10 tons an hour, delivering to storage bin in causticizing plant.

3

Vibrating pan feeder arrangement delivering salt cake to pulverizer from storage bin. The minus 1/8" salt cake is conveyed to a service bin in the recovery unit by the Airveyor. Exhauster, extreme left, furnishes air for the Airveyor Systems.

4

Unloading salt cake from cars to two storage bins at rate of 10 tons an hour. This same system also reclaim from storage and delivers to a service bin in the recovery building.

A-178
2243

DRY MATERIAL CONVEYING SYSTEMS AND COOLERS . . . COMPRESSORS AND VACUUM PUMPS . . . FEEDERS AND ASSOCIATED EQUIPMENT

PULP & PAPER — April 1954

99

amine, developed to size neutral and alkaline papers, including calcium carbonate filled papers. It is a thermoplastic, water dispersible, light brown colored synthetic wax." Methods of application were described. "Among properties claimed added to papers are high resistance to ink penetration, reduced paper curling, improved resistance to color degradation. It has been found useful in a wide variety of papers."

An interesting paper described studies of rosin sizing by means of autoradiography and the electron microscope. "The observations support the often expressed opinion that rosin size is not present as smooth covering films but rather in the form of discrete particles."

Other interesting papers relating to paper making included: "Investigation of Methods for Dimensionally Stabilizing Paper", "Load Meters, Tension Meters and Torque Meters for Paper Machines", "Mechanical Properties of Paper."

PULPING—Big Steps Being Taken in Sulfate and Sulfite

THE FIELD OF ALKALINE pulping was quite thoroughly covered during the alkaline pulp meeting held last fall at Houston, Texas (See complete review of papers in Jan. 1954 issue of PULP & PAPER).

One paper reviewed factors influencing selection of modern lime recovery kilns. This up-to-date review is recommended for those contemplating such installations. An excellent review is given of description, operation, size, and efficiency of the Peabody scrubber for use on lime stack gases.

Personnel at the University of Florida have been carrying on an extensive investigation relating to the ever interesting subject of continuous pulping. The latest contribution gives results of effect of continuous cooking methods on liquor evaporation and salt cake losses. This work will undoubtedly be carefully followed by those inter-

ested in alkaline pulping.

"The data show that continuous pulping at a constant concentration of 20 grams per liter can be accomplished with the same overall evaporation load as for batch cooking under present commercial conditions. When continuous pulping at high concentration (80 grams per liter) is involved, the evaporation load increases by about 12%."

The Cost of Changing Cooking

In the field of acid pulping a panel type discussion was held on a number of pertinent subjects relating to this process of pulp manufacture. This was done in order to summarize technology in the field and possibly stimulate presentation of further data on the subject at later dates. Trends in sulfite pulping discussed are all the result of attempts to lessen distribution of spent liquors to flowing waters or to utilize various existing species in an area.

A summary of uses of other bases than calcium for sulfite pulping was given. These include magnesium, ammonia, and soda. Where there is no recovery of chemical, it has been shown that the increased cost per ton of pulp by use of these other bases will amount to from \$3.50 to \$5.00. In only one instance has there been a successful adaptation of another base and that is magnesium. One commercial mill is in operation in this country and another under construction. The use of soda base involves a very complex, expensive method of soda recovery if such recovery is essential. In the use of ammonia base, only the SO_2 and heat may presently be recovered from the waste liquor. In the recovery process the ammonia normally breaks down to nitrogen and hydrogen sulfite. Use of bases other than calcium somewhat facilitate cooking operations through slightly shorter cooking time. This latter is quite apparent in use of ammonia base. The quality of pulps in all conditions are quite similar.

Using More Wood Species

"Variation in forest resources species of a given area, coupled with inability to move large-scale expensive manufacturing facilities, dictates necessity for utilization of various species in an area. In general, common hardwoods such as aspen, birch, beech, maple, oak, elm, can be satisfactorily pulped by the acid sulfite pulping process, resulting in normal yield bleachable pulps. It is recognized, of course,

MILLS CAN NOW ANTICIPATE EVAPORATION REQUIREMENTS

THIS CHART GRAPHICALLY tells the story of a paper given at Paper Week by HARVEY K. WATERS, who has been representing Swenson Evaporator Co. out of Birmingham, Ala., to Deep South mills since Nov. 1. Co-author was his chief, RALPH E. BERGSTROM, Manager of Swenson's Pulp and Paper Dept. USE OF DILUTION CURVES now helps a mill anticipate evaporation requirements. Chemical losses in washing pulp are plotted against dilution factors and subsequent calculations can fix feed concentration to an evaporator for any specific chemical loss in pulp from washers. Optimum correlation of washing and evaporation results in lower

operating costs. Most economical number of wash stages and evaporator can be determined. High cost materials make this important.

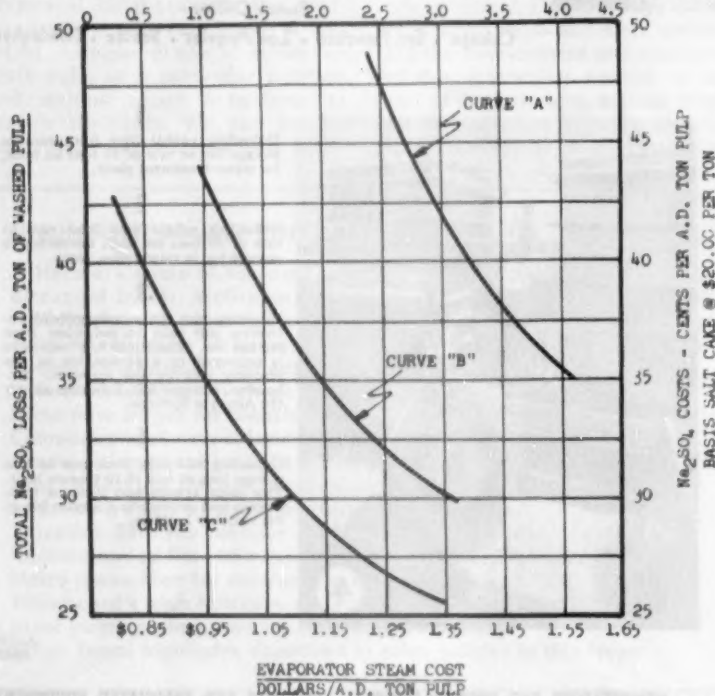
DILUTION FACTOR—LBS. WATER PER A.D. LB. PULP. In this chart:

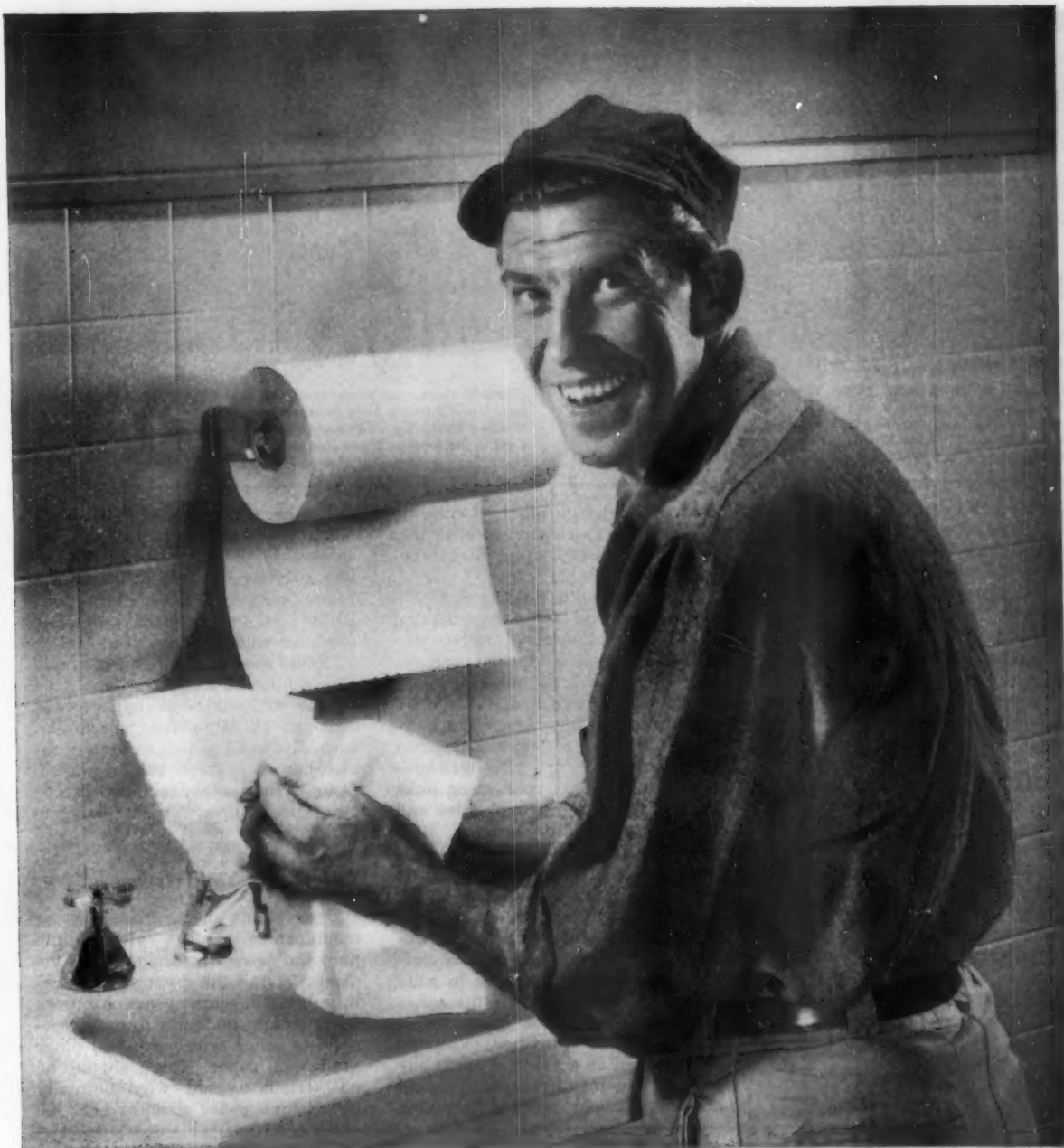
CURVE A—for 2-drum, 3-stage system.

CURVE B—for 3-drum, 4-stage system.

CURVE C—for 4-drum, 5-stage system.

BASIS FOR ABOVE COST CALCULATIONS: 2,850 lbs. total solids/a. d. ton pulp; 21 percent total solids as blown; 50% total solids—evap. discharge; sextuple effect evaporator—4.90 economy; steam costs 48 cents per 1,000 lbs.; Tappi KMn04 #28.





WET-STRENGTH TO SPARE

For any type of paper or board, specify Hercules Kymene® when you want high wet-strength at an economical cost. This wet-strength resin comes ready to use and is available quickly wherever you are located.

Easy to handle, Kymene has excellent stability in dilute solutions and has proven its value wherever used. Your Hercules P.M.C.

representative will be glad to discuss this popular cationic urea-formaldehyde resin with you, or write Hercules for technical data.

Paper Makers Chemical Department
HERCULES POWDER COMPANY
INCORPORATED
 965 King St., Wilmington 99, Del.



SIZING MATERIALS AND CHEMICALS FOR PAPER



HERE'S HOW YOUR FOURDRINIER WIRES ARE MADE

AT PAPER WEEK IN NEW YORK, Wisconsin Wire Works, Appleton, Wis., presented a movie at the end of the Fourdrinier Paper Making session of the Tappi opening day program Feb. 16. STANLEY HUSS and FRANK HALLOIN, of Wisco, assisted in the presentation. Through courtesy of JAMES E. WATSON, Vice Pres. and Mgr., Wisconsin Wire,

provided these still prints from the movie for PULP & PAPER: Left: View showing huge looms in one corner of Weaving Dept. Middle: Stretching and inspecting a completed wire is a thrilling sight in the modern Wisco plant. Right: Showing seaming of a Wisco wire.

that the characteristic short fiber of the deciduous species somewhat limits the extent and type of papers into which this pulp may be converted. A certain degree of trouble is experienced from aspen sulfite due to the presence of a characteristic pitchlike substance and inner bark fibrous specks. The latter is eliminated in the bleaching process.

"It is well recognized that problems relating to utilization of birch revolve around efficient removal of bark in woodroom operations. The acid sulfite pulping of gums, oaks, maples, and elms results in normal yield of unbleached pulps of characteristic darker color than aspen or birch. Aspen, birch, beech, and cottonwood may be readily bleached to acceptable brightness by normal three-stage bleaching procedure.

Difficulties due to inherent coloring matter are experienced in bleaching gums, oaks, and maples to acceptable brightness.

"The acid sulfite pulping of highly resinous woods for paper making has been a subject of rather exhaustive research on the part of prominent investigators such as Hagglund, Schwalbe, and Erdtman. As a result, it has been quite definitely established that a certain fraction of the resins in certain species may serve as connecting links between large lignin molecules and inhibit acid sulfite digestion, particularly in the heartwood. Resins in pine wood do not necessarily inhibit penetration of the acid sulfite cooking liquor. Researches have indicated that pine heartwood extracted with ether or benzene cannot be satisfactorily pulped in spite of removal of resin. On the other hand, if the ether or benzene extracted wood is further extracted with alcohol or acetone, a small additional amount of resin is removed and pulping may proceed normally.

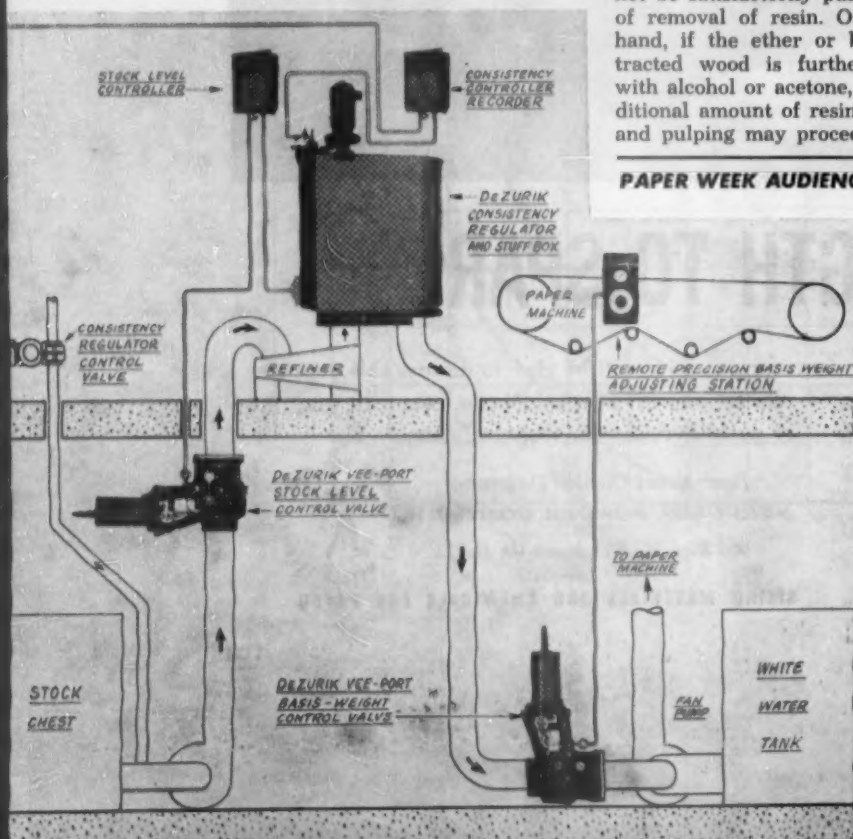
It has been determined that certain resinous woods such as jackpine contain small quantities of phenol-like substance which definitely inhibits complete satisfactory acid sulfite pulping regardless of base used for acid manufacture.

"Some species rich in certain tannins cannot be satisfactorily pulped by the acid sulfite pulping process, although all tannins do not inhibit such. Redwood is rich in tannin but can be easily acid sulfite pulped. Douglas fir, another tannin rich species, is pulped with extreme difficulty."

A New High Yield Newsprint

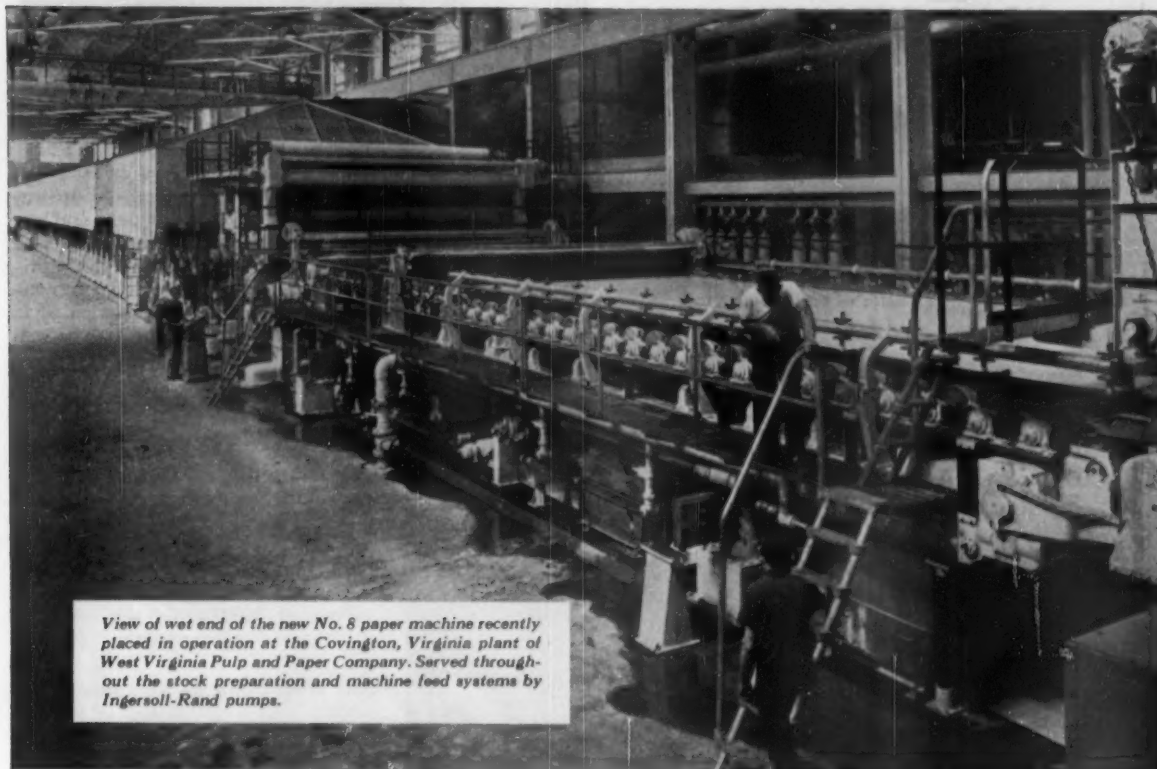
Descriptions of a procedure for manufacture of 65% yield sulfite pulp for newsprint undoubtedly indicates one of the greatest advances in pulping in recent years. A procedure which undoubtedly will expand to other type pulps and other grades of paper. There should be no serious reason why normally newsprint paper should not be

PAPER WEEK AUDIENCE HEARD ABOUT THIS CLOSED SYSTEM



THIS CLOSED STOCK SYSTEM for paper machine supply engineered and built by DeZurik Shower Co., Sartell Minn., is in operation in two Northern mills and one Southern mill already — others reported putting it in. This system was described in paper given at New York Tappi session by DAVID DEZURIK, president. Mr. McGregor's review refers to it as an "important" paper. Mr. DeZurik described each component part of a complete consistency, regulator and described its function. The regulating unit senses changes in consistency and sends correcting signal to instrument. The instrument receives the signal and, if necessary, sends controlled air pressure to the dilution valve. The valve is equipped with a positioner to receive signals. The positioner controls air pressure to a diaphragm motor which opens or closes dilution valves to correct consistency. The regulating unit is suspended in a suitable box of either open type, pipe line type, or pan type appropriately designed to meet each application. Each box design was discussed in detail itemizing advantages. Discussing consistency control directly ahead of paper machine he also discussed and showed slides of precision vee port control valve equipped with remote control station.

Proven dependability of Ingersoll-Rand pumps
MEETS WEST VIRGINIA PULP and PAPER CO. NEEDS
 on New Machine Project at Covington Mill



View of wet end of the new No. 8 paper machine recently placed in operation at the Covington, Virginia plant of West Virginia Pulp and Paper Company. Served throughout the stock preparation and machine feed systems by Ingersoll-Rand pumps.

RECENTLY placed in operation at the Covington, Virginia plant of the West Virginia Pulp and Paper Company, the new No. 8 machine represents the latest in paper making equipment. Capable of producing 200 tons per day, it is designed to make paper of top quality and uniformity from local hardwood pulp—including heavy grades of bleached board as well as almost any other basis weight desired.

Ingersoll-Rand pumps serve in practically every phase of the stock preparation and machine feeding process for this new machine. Noted for high efficiency and trouble-free performance, they range from the 24" single-stage Class ALV centrifugal fan pump to Classes HGVL and EGV single-stage vertically-split paper-stock pumps and Class BEV two-stage water pumps.

Altogether, 18 of the 200 I-R pumps installed at Covington serve No. 8 machine.

More and more mills seeking answers to varied pumping problems are finding a dependable solution in the com-

plete Ingersoll-Rand pulp and paper mill pump line. Ask to have an experienced field engineer study your situation, and submit recommendations to meet your particular requirements.

TWO OF THE I-R PUMPS ON NO. 8 MACHINE



ALV: White water



HGVL: Heavy stock

986-10

Ingersoll-Rand

11 Broadway, New York 4, N. Y.

PUMPS • COMPRESSORS • VACUUM EQUIPMENT • GAS AND DIESEL ENGINES • AIR AND ELECTRIC TOOLS • ROCK DRILLS

5

NEKOOSA-EDWARDS

Multi-Million Dollar

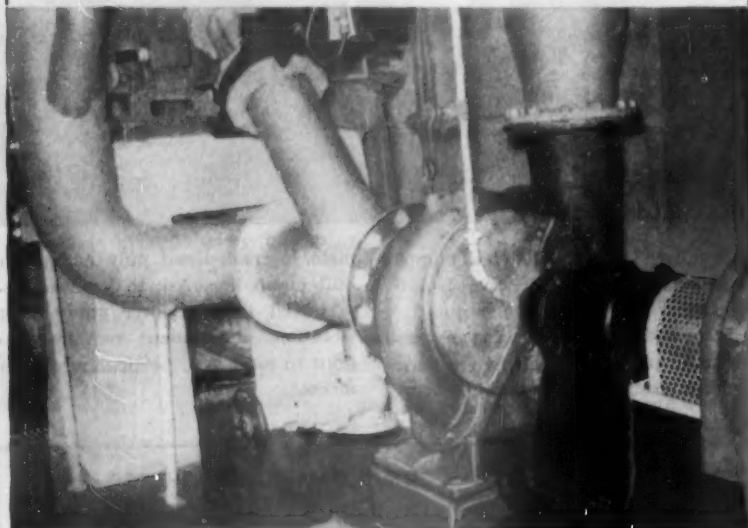
YEAR EXPANSION PROGRAM

included the selection of various

WARREN PUMPS

for Stock handling, such as the 4400 g.p.m. primary Vortrap pump shown here. This pump handles stock ahead of the new No. 9 machine, a 180-inch Fourdrinier, the largest, most modern and versatile of the nine machines now installed at Nekoosa and Port Edward Mills.

These Warren Pumps, like thousands of others installed in progressive Pulp and Paper Mills here and abroad, can be depended upon to successfully handle the services for which they were specifically engineered and built.



*It will pay you too, to put your
pumping problems up to Warren!*

PP-32



WARREN PUMPS

WARREN STEAM PUMP COMPANY, INC.

Warren, Massachusetts

manufactured wherein the sulfite content of the sheet should consist of high yield pulp.

A prominent Canadian concern, through practical application, has conclusively demonstrated the validity of such a procedure. Needless to say, any capital expenditures necessary due to alteration or additions to physical equipment can readily be amortized in a remarkably short period.

The subject of high yield chemical pulp preparation by any of the normal chemical pulp processes may well warrant the serious attention of organizations manufacturing their own pulps, as well as government and educational research groups interested in the field of pulp and paper. Consequently to the production of high yield pulps arises the multiplicity of problems involved in conversion of these high yield pulps to various grades of papers to which they may be adapted.

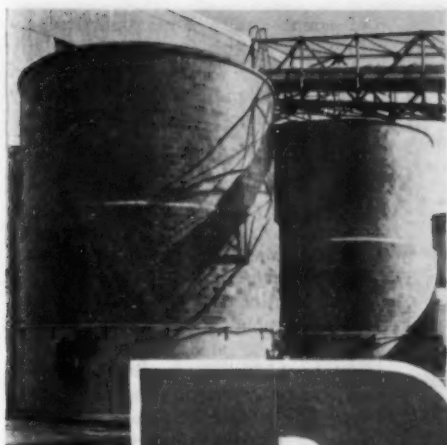
Let us cite an example of a 100-ton per day newsprint mill making its own sulfite. At 20% sulfite in the sheet and 300 days operation per year, they would require 6,000 tons of sulfite equivalent to approximately 12,000 cords of wood at normal pulp yields. At 65% yield sulfite pulp, the yearly wood requirement for sulfite would be 8400 cords—a saving of 3600 cords per year at a value of approximately \$90,000.

Job Well Done on Streams

The subject of stream problems as related to sulfite pulping in the East, Midwest and Pacific Coast was reviewed at the acid pulping meeting.

It was obvious that mills in general were completely cognizant of the problem at hand. In addition, it was also obvious that mills individually and as groups were investigating every possible procedure for alleviating or minimizing the problem. Likewise, it is obvious that no complete practical, economical procedure has yet been found to solve the problem.

Procedures in practice which help reduce the problem may be summarized as follows: Use of spent liquor for road binder; preparation of chemicals, adhesives, dispersing agents and yeast; lagooning and consequent infiltration into the soil; distribution through dispersion medium at reasonable depth in free flowing waters. To a limited extent evaporation and burning and soil conditioning. Sulfite pulp manufacturing organizations should be congratulated on the real efforts and expenditures made toward disposal



We Design and Build

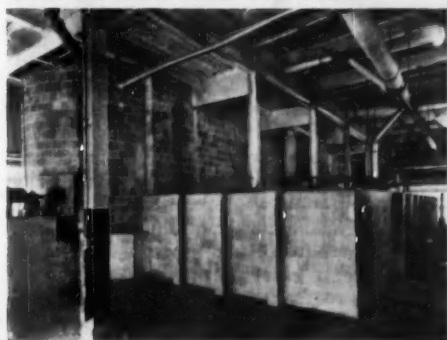
BIG

Tile Structures



Complete service — design, engineering, construction, maintenance — of corrosion-resistant storage and process structures — from the smallest to the largest.

For wet materials, these structures are reinforced concrete faced on both sides with glazed tile; for dry materials, they can be either this same construction or steel-reinforced hollow tile.



70 Years of Successful Corrosion Resistant Installations throughout the North American Continent

Write for Bulletin A-153

SINCE 1884
Specialists in
Design
Installation
and Servicing
of Linings and
Tile Tanks

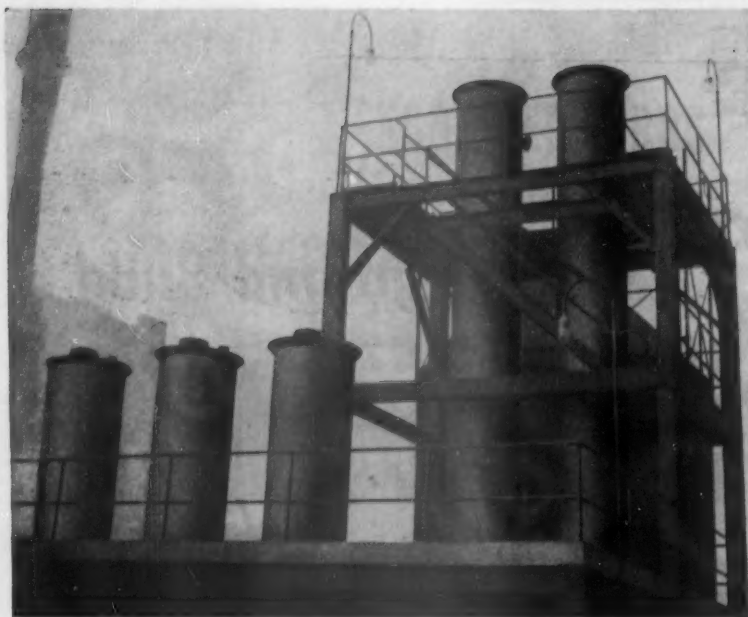
STEBBINS

Engineering and Manufacturing Company, Watertown, N. Y.

STEBBINS ENGINEERING CORP. — TEXTILE TOWER, SEATTLE, WASH.

CANADIAN STEBBINS ENGR. & MFG. CO., LTD. — CASTLE BLDG. MONTREAL, CANADA





VITROPLAST® STOPS ClO_2

VITROPLAST is the only complete satisfactory cement available that stops Chlorine Dioxide (ClO_2) corrosion. A vinyl base cement, VITROPLAST resists Chlorine Dioxide bleach solutions, even at elevated temperatures. It is used for joining acid brick in lining Reactors, Absorbers, Storage Tanks, Retention Towers and Bleach Cells.

Shown here is one of the many units throughout the country using VITROPLAST. The Reactor and Absorber towers are installed at P. H. Glatfelter Co., Spring Grove, Pa.

Let us tell you more about this specific application of VITROPLAST, in your Chlorine Dioxide plant. We will be pleased to show you how it has economically helped solve the corrosion problems of other manufacturers in the Paper Industry. Write for Bulletin S-30E.

Reg. U.S. Pat. Office 558,344

ATLAS . . . corrosion-proof
cements . . . coatings . . .
vessel linings . . . plastic
structures.



**ATLAS
MINERAL
PRODUCTS CO.**

MERTZTOWN, PENNSYLVANIA

of spent sulfite liquor particularly in view of the fact that in many instances the deleterious effect of such spent material is still highly questionable.

Semi-Chemical Pulping Increases

The subject of semi-chemical pulping, possibly the original phase of high yield pulping, continues to receive considerable attention from Tappi members.

We cannot overlook the fact that semi-chemical pulp production has increased to a figure of approximately 1,750,000 tons in 1953. Activities of the committee have been largely centered on a semi-chemical pulping equipment survey. Beyond doubt, considerable advances will be made in this field of pulping in the immediate years.

Semi-chemical pulping using sodium sulfite and sodium carbonate readily lends itself to the successful pulping of practically all wood species.

Purified Pulp— ClO_2 Processes and Dissolving

PAPERS RELATING to pulp purification pertained primarily to alterations or improvements in bleaching techniques, particularly bleaching kraft pulp.

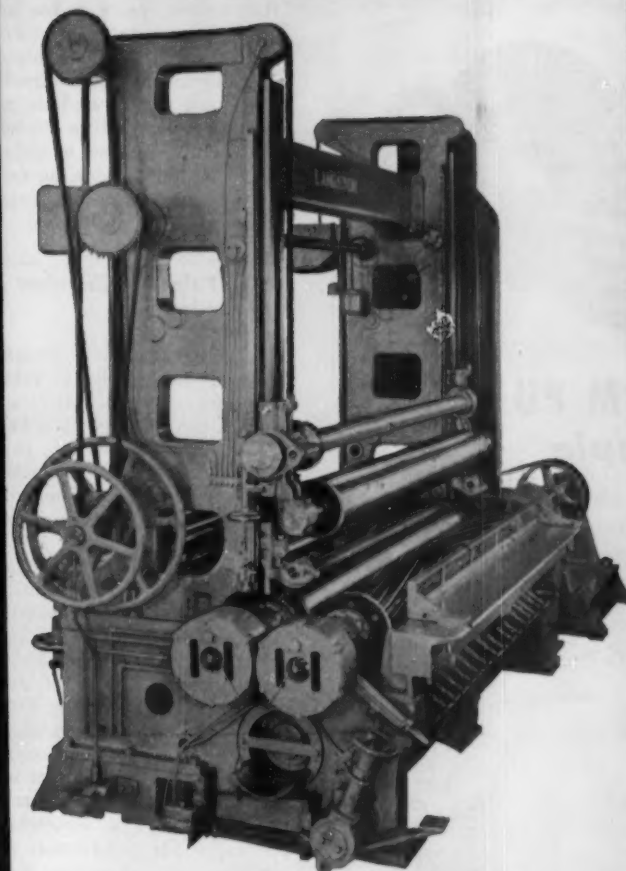
A new process for bleaching kraft pulp with sodium peroxide as a final stage was described. "In this process the bleach response of sodium peroxide in the last bleaching stage is improved by an acid post-treatment at the preceding hypochlorite stage. In the post-treatment technique, the pulp at completion of the hypochlorite stage is adjusted to pH5 with mineral acid at low density, washed after short treatment time, and bleached with an alkaline peroxide in the last stage. Thus, it has been possible to produce bleached kraft pulps in mid-80's brightness with stable color and strength properties."

An excellent review of processes for generating chlorine dioxide in pulp mills was presented. In this review, the author outlined the differences in all six processes for producing chlorine dioxide.

"All six processes operate well and are producing chlorine dioxide of sufficient quality and quantity to satisfy the requirements of pulp bleach plants. Major differences among them are found in capital cost, raw material requirements, maintenance difficulties, ease of startup, shutdown, and change of production rate, simplicity of control, and explosion hazards."

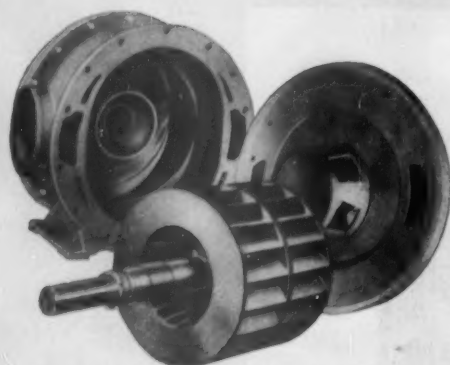
Continued on page 108

LANGSTON SLITTERS & WINDERS



Heavy, stream-lined cast iron "box section" side frames are bolted and pinned to massive cast iron bedplate. All controls are located for convenient operation and adjustment. All rotating members are dynamically balanced for high speed production of 3500 feet per minute and higher. You can rely on Langston's for highest quality rolls with minimum upkeep.

SAMUEL M. LANGSTON COMPANY
CAMDEN 4, NEW JERSEY



NASH VACUUM PUMPS are simple

One moving part. No valves, no pistons, no timing gears, no internal lubrication. This makes possible important operating advantages no other type pump offers.

Plus—

NASH ENGINEERING COMPANY
414 WILSON AVE., SO. NORWALK, CONN

An Added Stage for Kraft

An additional or substitution stage for kraft pulping that is receiving considerable attention lately involves the use of mixed sodium and hydrogen peroxides. This stage may be applied just ahead of the last hypochlorite stage in a multi-stage kraft bleaching system. By this procedure it has been found that higher, more stable brightness values are obtained for kraft pulp and strength of final pulp is superior to conventional methods.

We can expect to hear more regarding advances in bleaching of kraft pulps by use of chlorine dioxide, and peroxides, as an adjunct to use of chlorination, caustic extraction and hypochlorite.

Using Pulps for Chemical Conversion

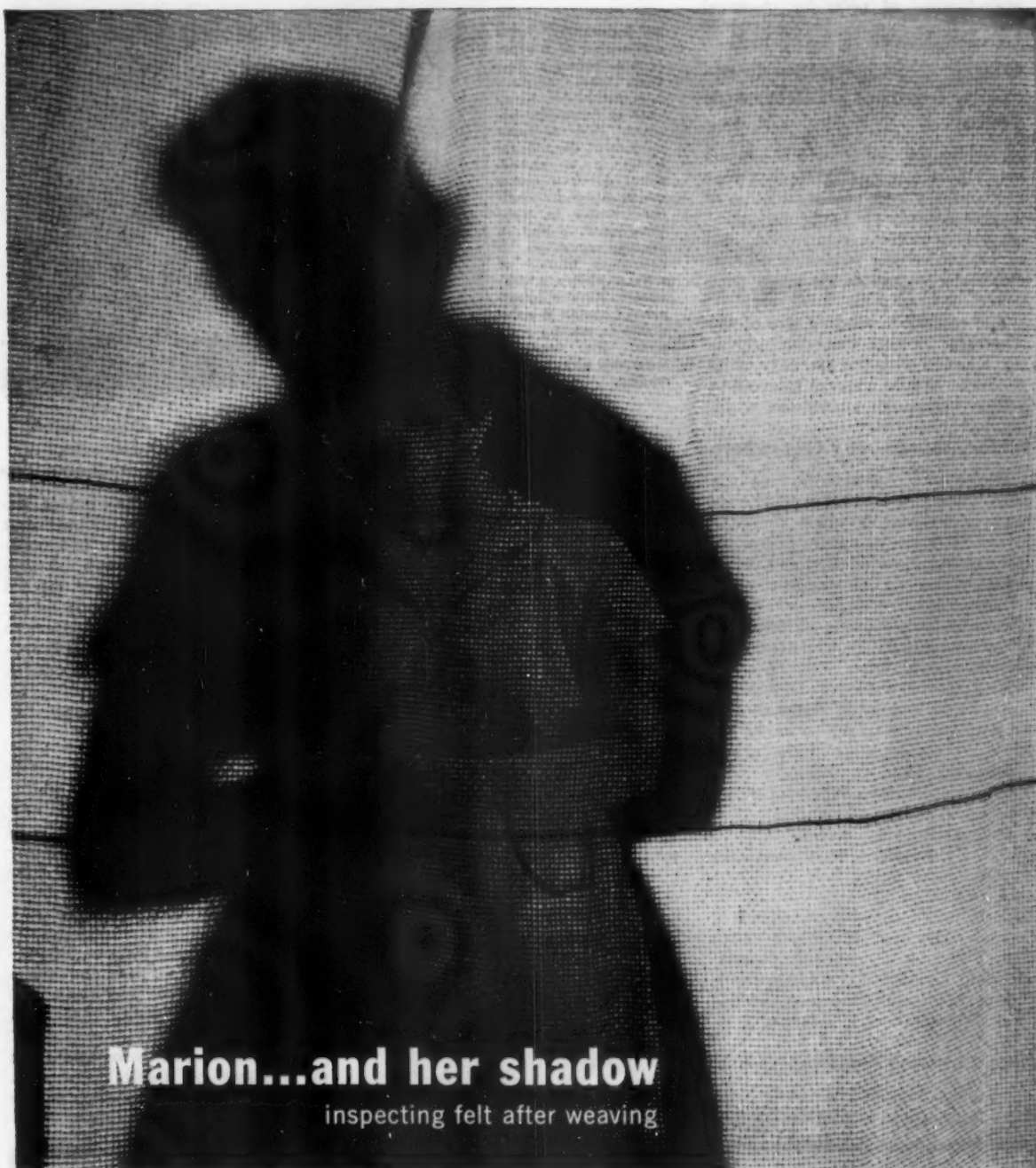
A rather complete program was devoted to problems relating to pulps for chemical conversion. The subject can be important in view of the fact that latest U.S. production figures for pulp production for chemical conversion have reached a figure of approximately 750,000 tons per year.

Technical subjects discussed related primarily to chemical properties of the pulps and certain evaluations of converted pulps. In preparation of pulps for chemical conversion probably the most prominent factor is pulp uniformity. Other factors are caustic absorbency in viscose type pulp, and viscosity and clarity of final solutions of both viscose and acetate type pulps.

Undoubtedly, a somewhat ideal procedure for production of pulps for chemical conversion would involve some of the following features:

Use of a single wood species in an area; uniform aging and blending of the rough wood of the species found in the area; production, storage and blending of sizable quantities of chips prior to transporting to the digester house; blending of two or more cooks of pulp coupled with uniform cooking techniques; blending sizable quantities of unbleached pulps prior to bleach plant; accurate, precise bleach procedures; blending of sizable quantity of the final bleached pulp, and final drying under carefully controlled conditions.

Many of these conditions may be difficult of accomplishment but should be seriously considered when preparations are being made for construction of a new mill for



Marion...and her shadow

inspecting felt after weaving

Huyck can weave any felt to meet your needs—any size or construction, for any requirement. Here are the reasons why:

- Huyck mills are equipped with the finest machinery available
- Huyck's weaving experts are trained in every advanced technique
- Huyck's field engineering department is the largest, and the best trained, in the felt industry
- Huyck's research and development department works constantly to improve weaving processes.

This is the most effective team in the felt industry, and it is always at your service.

Consider service carefully when you buy felts: it must be always complete and dependable. As the Huyck service record proves, Huyck felts—with Huyck service—mean better production and lower costs for you.



HUYCK FELTS

first in quality...first in service

F. C. HUYCK & SONS • ESTABLISHED 1870 • RENSSELAER, NEW YORK

PULP & PAPER — April 1954

109

manufacture of pulp for chemical conversion.

OTHER SESSIONS—Comment, Interest in Drainage Tester

ACTIVITIES OF THE structural fibrous materials group during the past year has centered around investigation of test procedures. Of particular interest was a review, comparison, and evaluation of the structural fibrous materials committee drainage time tester.

The rapidly expanding size of the structural fibrous materials industry, coupled with the diversity of its products, should warrant interesting activities through committee work.

Water, Water—It's Everywhere

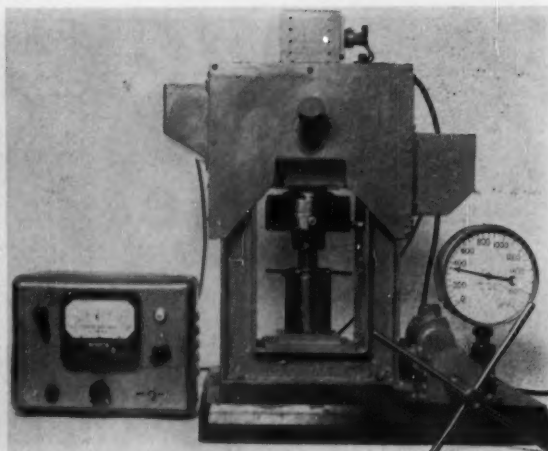
Water may be classified as the most widely used and wasted raw material utilized by man. Needless to say, it finds adaptation in practically every phase of pulp and paper manufacture. It is the principal transport medium of pulp and paper fibrous and non-fibrous materials. It is an exceedingly important source of power and steam.

With such widespread usage in the industry obviously water should receive attention in a number of subjects relating to manufacturing procedures. Thus we find in the annual program, interesting informative papers presented relating to the following subjects: *Condensate Corrosion, Continuous Preparation and Application of Silica Sols, Accelerated Biological Oxidation of Kraft Mill Effluents, Aerobic and Benthic Oxygen Demand of Paper Mill Waste, Stream Pollutional Aspects of Slime Control Agents, Effect of Different Pulp on Biological Activity of Phenylmercuric Acetate.*

More Corrosion Problems

Probably none of the basic sciences finds wider application in the

THIS CHAPMAN "Printing Smoothness" Tester was subject of a series of three papers at New York Tappi sessions. S. M. CHAPMAN, Supervisor of Printability Research Pulp & Paper Institute of Canada, for whom it is named, points out it measures smoothness under conditions similar to those experienced during a printing operation. It determines fraction of surface which will touch smooth surface (glass) pressed against it under similar to printing pressures. The improved tester now gives a direct reading.



INSTRUMENT MEASURES "PRINTING SMOOTHNESS"

field of pulp and paper manufacture than that of chemical engineering. Thus, the logic of setting up fields of investigation in the industry. Activities during the past year resulted in reports relating to corrosion problems, pulp washing and evaporation. Since chlorine dioxide is finding quite wide adaptation in kraft pulping, knowledge regarding corrosion resistance of metals and alloys under such conditions is important.

Problems relating to evaporation of spent sulfite liquor is and will receive attention from this group. The field of continuous pulping may well receive the attention of this group. We are reminded that the early development of the acid sulfite pulping process was delayed through a certain lack of knowledge and appreciation for chemical engineering principles.

Statistics Techniques Aim at Controls

Exemplified by committee meeting activity and the number and di-

versity of papers presented at the annual meeting, it is obvious that this field of investigation is becoming important in Tappi and valuable contributions can be made toward the manufacture of pulp and paper.

Papers were presented relating to process control aimed toward production of desired uniform products.

Two Sessions on Corrugated Containers

In view of the fact that corrugated materials have reached an approximate tonnage of 1,800,000 tons per year and containers produced from such materials find a wide variety of applications, problems confronting production men and technologists in the trade are numerous. Two rather complete meetings were held relating to the subject. Of particular interest was use and properties of adhesives, and properties of corrugated containers under high humidity conditions.

(See other articles in this issue for reviews of digester corrosion and electrical engineering papers given in New York.)



proven
by
performance



Sutherland Breaker Trap

UTHERLAND REFINER CORPORATION
TRENTON 8, NEW JERSEY

Men Wanted

Manager for southern kraft pulp and kraft paper mill; asst. supt. preferably with degree in chemistry; starch salesman; design engineer, excellent salary; and many others.

Charles P. Raymond Service, Inc.

Phone: LIberty 2-6547
294 Washington St., Boston 8, Mass.

PAPER CONVERTERS NOTE:

WOULD YOU LIKE A PERMANENT CLOSE MILL CONNECTION with a cylinder machine mill in the Middle-west on specialty products, including various types of the highest grade box-boards, both coated and uncoated. If so, write at once for particulars to Box 174, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

SALES ENGINEER AVAILABLE

Young industrial engineer with four years experience in paper industry. Prefers West Coast, but no limitation. Reply to Box 177, PULP & PAPER, 370 Lexington Ave., New York 17, New York.

A SALES ORGANIZATION widely acquainted in the industrial field of Metropolitan New York, New Jersey, Eastern Pennsylvania, and Connecticut is seeking added lines of LIQUID PROCESSING EQUIPMENT to sell to the Chemical, Petroleum, Paper- and Textile Industries. An exchange of confidential information is invited as a basis of negotiation. Box 176, PULP & PAPER, 370 Lexington Ave., New York 17, N.Y.

WANTED

MECHANICAL DESIGN ENGINEERS for plant layout and automatic machine design. Positions entail wide range of engineering work, some electrical. Experience in pulp, paper or wallboard plants desirable but not necessary. Reply giving complete details of experience and training. Opportunities for advancement. Salary to start \$5,000-\$7,000 depending on age and experience. Location South. Reply Box 173, PULP & PAPER, 370 Lexington Ave., New York 17, New York.

TECHNICAL DIRECTOR

For new and expanding pulp mill Chemical engineering graduate with at least ten years' experience in the manufacture of bleached kraft pulp and high grade white papers. Must have had enough experience in directing technical work in these fields to qualify him to assume full responsibility for the management of Technical Department. This would include the supervision of laboratory, quality and process control, process and product development. All replies will be kept in strict confidence. Please make your resume as complete as possible and furnish recent photograph. Our employees know about this advertisement. Reply to Box 175, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

DEPENDABLE PERFORMANCE

DECO
INDUSTRIAL AIR SYSTEMS

MILL *Ventilation*
AT ITS BEST
FOR MEN and MACHINES

**DREW
ENGINEERING
CO.**

**809 N.E. LOMBARD STREET
PORTLAND 11, OREGON**
TELEPHONE, UKIAH 3681

EQUIPMENT and SUPPLY CO. NEWS

JOHN WALDRON CORP. held an open house at their new research and engineering laboratory at New Brunswick, N.J. during Paper Week. The two-story building contains a complete pilot plant web processing line, development machine shop, offices, engineering design facilities, and storage for precision laboratory instruments to measure performance of experimental machinery.

STOWE-WOODWARD plans building a new rubber roll covering plant at Griffin, Ga. to keep pace with rapid growth of the paper industry in the South. The plant will be strategically located in relation to Southern paper and textile mills on a 16 acre tract.

SAMUEL M. LANGSTON CO. and **MASSON SCOTT CO., Ltd.**, of London, England advise their agreement for sales abroad of Langston equipment has been enlarged to cover manufacture of all machines that make up a complete corrugating unit. Langston also announces an agreement has been concluded with **MONTAGUE MACHINE CO.** whereby the latter will take over manufacture and sales of Langston's

complete line of tube winding equipment.

AMERICAN HOIST & DERRICK CO. reports it is now offering an alternate rope crowd front for its Model 375 3/4 yd. shovel. The new front features a box section type boom with large diameter boom point sheaves and wide rugged cast steel boom foot. Further details can be obtained from your closest American distributor or directly from the company, 63 South Robert St., St. Paul 1, Minn.

B. F. GOODRICH CO., Akron O. has published a 32-page, illustrated manual that tells how to splice and repair conveyor and elevator belting. Copies may be obtained without charge upon request received on your company letterhead. A series of 42 photographs are used to illustrate, step-by-step fashion, proper belt-splicing procedure. The manual describes splicing materials, tools needed, the best conditions for splicing and repair, method of splicing cord and fabric belts and special procedure in splicing rayon belts.

The appointments of **C. L. PETER-**

Confidential Employment Service

For paper and pulp mills and paper converting plant. Our service is rendered without charge to employers seeking executives. No charge to applicant until position is accepted. We invite your inquiries.

Charles P. Raymond Service, Inc.

Phone: Liberty 2-6547
294 Washington St., Boston 8, Mass.

SON as divisional vice president of the **BROWN INSTRUMENTS DIVISION** of **MINNEAPOLIS-HONEYWELL REGULATOR Co.** and **O. B. WILSON** as general sales manager were announced recently by **H. F. Dever**, president of the division. Mr. Peterson, who had been general sales manager of the division since 1952, will devote major part of his time to sales policy and planning.

U. S. RUBBER CO. announces development of a sponge rubber matting to prevent foot fatigue for people whose jobs keep them on their feet all day. Called "Foot-Ease," it is designed to cushion effects of concrete, tile, or similar floors. A recent survey has indicated 70% of industrial workers slow down periodically as a result of foot fatigue. The new matting, in ribbed and pyramid surfaces, will be sold in 25 foot lengths, 36 inches wide.



WILLIAMS-GRAY CO.

PAPER AND PULP MILL SUPPLIES

221 North LaSalle St., Chicago 1, Illinois

Lindsay & Niagara Wires * Knox "Excelsior" Felts
Cotton & Asbestos Dryer Felts * Carrier Rope * Splicing Tissues
Deckle Webbing * Apron Cloth * Wire Brushes

RAY SMYTHE

Pulp and Paper Mill
Machinery and Supplies

REPRESENTING:

RICE BARTON CORP. — HEPPENSTALL CO.
SHENANGO-PENN MOLD CO.
LANGDON COLLAPSIBLE WINDER SHAFTS
NORTMANN DUFFEE CO.
ATWOOD-MORRILL CO.
SMYTHE MULTIVAT FLAT SCREENS
CARTHAGE MACHINE COMPANY
HORTON MANUFACTURING CO., INC.
SUTHERLAND REFINER CORP.
PULP REFINING SYSTEMS

501 PARK BUILDING, PORTLAND 5, ORE.
Beacon 0502 & 2238



proven
by
performance

Sutherland Inc. Pressure Washing*
Sold and Serviced by



**SUTHERLAND REFINER
CORPORATION**

*U. S. Patent No. 2,355,091

TRENTON 8, NEW JERSEY



Mill at Port Alberni

**BLOEDEL
SUPERTARE
KRAFT**



Mill near Nanaimo

**HARMAC
BLEACHED
SULPHATE**



Two great mills, producing bleached and unbleached Sulphate pulp, provide a reliable open market supply for discriminating buyers.

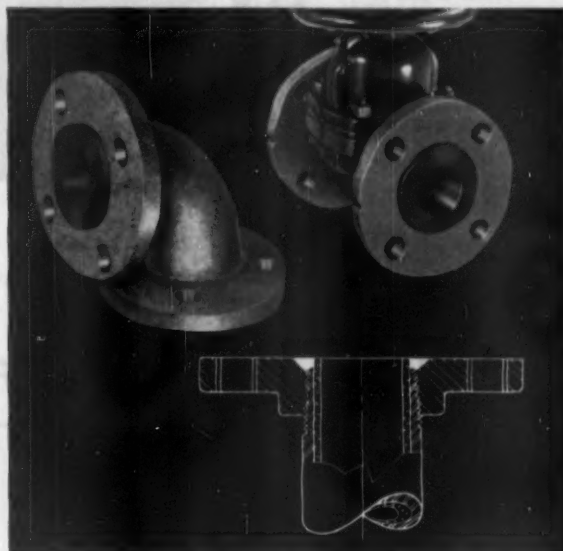
The "brightness" of HARMAC pulp with the chlorine dioxide system of bleaching, and the "cleanliness" of BLOEDEL KRAFT, are features that contribute to the popularity of these products in world markets.

Rail and deep sea facilities at both mills.

MacMILLAN & BLOEDEL LTD.
837 West Hastings Street, Vancouver 1, Canada

SARAN LINED PIPE HANDLES PAPER MILL CORROSIVES

Saran lined pipe, fittings and valves especially effective for the three "hard-to-handle" services in pulp and paper mills • Chlorine dioxide bleach systems • Hypochlorite bleach systems • Alum systems



Here's why:

Temperature Range	-0° to +194°F.
Field fabrication	easily accomplished
Pressure rating	150 psi (with cast iron fittings)
Joint tightness	unexcelled dependability
Service life	indefinitely long
Availability	immediate

Saran lined pipe, fittings and valves are playing an important part in helping paper and pulp mills to avoid unscheduled "shut downs" that mean production loss, layoffs and heavy expense. We'll be glad to assist with your installation plans. Write or call

the SARAN LINED PIPE COMPANY, Ferndale, Michigan, or our nearest sales representative.

RELATED SARAN PRODUCTS
Saran rubber tank lining • Saran rubber molding stock • Saran tubing and fittings • Saran pipe and fittings.

Saran Lined
Pipe Company
2415 Burdette Ave.,
Ferndale 20, Mich.

Please send me a copy of your catalog on
Saran Lined pipe, fittings and valves.

Name _____
Title _____
Company _____
Address _____
City _____ State _____

SP1164E

SARAN LINED PIPE COMPANY

2415 Burdette Avenue, Ferndale 20, Michigan

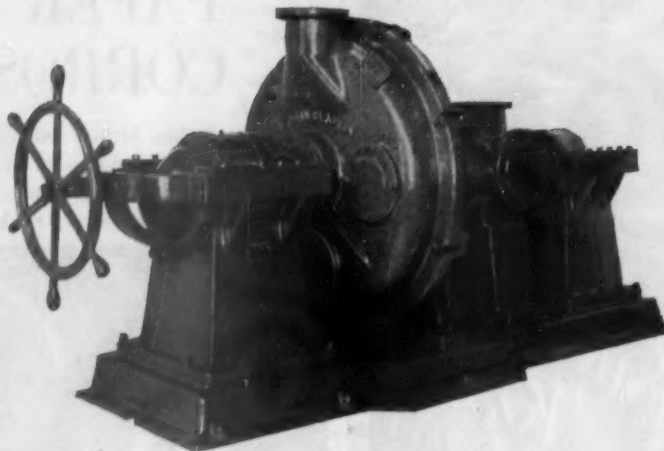
New York • Boston • Pittsburgh • Tulsa • Philadelphia • Chicago • Portland • Indianapolis
San Francisco • Houston • Salt Lake • Los Angeles • Seattle • Cleveland • Charleston, S.C.
Minneapolis • Bethlehem • Washington • Buffalo • Spokane • St. Louis • Phoenix
Ft. William • Vancouver • Toronto • Montreal

HERMANN *Improved* CLAFLIN

"Continuous Beater & Refiner"

"Continuous"
Beating-Refining
Kraft Pulps for
Multiwall Bag,
Gumming & Kraft
Specialties.

Waxing Tissues
Glassine & Grease-
Proof Grades
Facial Tissue
Rag-Cotton Linters
Deinked Stock
Filler Stock
Liner Stock
"Cycling"



"Hot Brown Stock"
Blow Tank to
CLAFLIN direct
to the Washers

"Asplund Fibre"
.009 Corrugating

"Chemipulper"
"Defibrator Stock"
Roofing Felt

"Neutral Sulphite"
.009 Corrugating

"Knotter-Screen
Rejects"

Straw-Bagasse

Four Size Units Including No. 0 For Laboratory-Test Purposes.

NOW AVAILABLE: NEW NO. 3 HEAVY DUTY UNIT WITH TANGENT HEAD
FOR DEFIBERING HOT BROWN STOCK. REQUIRES LESS THAN 1-H.P. PER TON.

THE HERMANN MFG. CO. LANCASTER, OHIO

HANSEL ENGINEERING COMPANY

Consulting Engineers

Specialists in Hydraulic Barking
and Wood Preparation

1500 Westlake Avenue North
Seattle, Washington

1637 West Broadway
Vancouver, B. C.



For ...

• DESIGN • FINISH
• DEPENDABILITY
• UNIFORMITY • SERVICE

... a nationally recognized, independent, research organization
- to help you solve all your felt problems.

APPLETON WOOLEN MILLS APPLETON • WISCONSIN



proven
by
performance

Sutherland High Yield Kraft System*

**UTHERLAND REFINER
CORPORATION**

* U.S. Patent No. 2,591,106

TRENTON 8, NEW JERSEY



The GRAB
with the "GRIP"



Owen grapple tines move and grip independently, not simultaneously.

They get bigger loads per grab, handling more logs per day.

The results—larger daily production—lower costs—repeat orders from users.

The OWEN
Pulpwood
GRAPPLE

THE OWEN BUCKET CO.

BREAKWATER AVE., CLEVELAND, OHIO

Branches: New York, Philadelphia, Chicago, Berkeley, Calif.
Fort Lauderdale, Florida



Patents Pending

The Marvelous
Montgomery

BLO-HOG

(The only all-purpose
hog in the world)

**Eats Up
Everything!**

... including Pine, Oak, Gum, Hickory, Elm, Wet Veneer, Round-up and Sandy Bark. Conveyor-fed—no attendant required. Positively protected from major damage by tramp steel. All connections locked—nothing to shake loose. Maintenance costs unbelievably low.

"... Dear Mr. Montgomery: It is an unbelievable machine and it is still hard to believe that it is actually handling the enormous volume of scrap we are feeding into it. We operate the hog without an attendant—which means a considerable saving.—J. B. Black, Plant Superintendent, Ocala Manufacturing, Ice and Packing Co., Ocala, Fla."

C. I. T. Terms Available



Write for bulletin and details

JACKSONVILLE BLOW PIPE CO.

P. O. Box 3687, Jacksonville, Florida

FOR SALE—KRAFT PULP AND BOARD MILL

Capacity 150 tons daily of Natural Kraft

Located on Lake Superior at
ONTONAGON, MICHIGAN

There is always a supply of efficient reasonable labor on hand. This is the only industry in a town of 2,500 population.

The Mill has the following facilities:—

ONE 5 CYLINDER BOARD MACHINE CAPABLE OF PRODUCING 120 TONS OF BOARD FROM 12-PT. TO 45-PT. TRIM 116".

ONE PULP MACHINE CAPABLE OF DRYING 30 TONS AIR-DRY PULP IN 24 HOURS.

PULP MILL AND WOOD ROOM
(Rebuilt Last 5 Years)

NEW BOILER AND HIGH PRESSURE COMBUSTION RECOVERY UNIT.

ADEQUATE WOOD SUPPLY

For particulars apply

C. G. McLaren

NATIONAL CONTAINER CORPORATION
Tomahawk, Wisconsin

Serving JAPAN C.T. TAKAHASHI & CO.

IMPORTERS and EXPORTERS

216-218 Third Avenue South, Seattle 4, Wash.
Established 1898

Exporting:

All Grades of Pulp

Pulp and Paper Mill Machinery and Supplies

Preliminary Reports, Layouts, Estimates and Designs for Kraft, Sulfito, Dissolving and Semi-Chemical Pulp Mills, Paper and Board Mills.

In Japan write or telephone

C. T. TAKAHASHI & CO., TOKYO

Room 888 Marunouchi Bldg.

Telephone

WADA-KURA (20) 3631 or 3632

Branches:

New York

Los Angeles

Vancouver, B.C.

Taipei, Formosa

FITCHBURG "RESISTO" Stainless Steel Screen Plates

Simple Construction:

Heavy one-piece steel plate.
One-piece Bronze "shock-absorber" grid frame.
Joined with forged-in Inconel rivets. (no welding)

Highest Capacity: Cut with our famous "DUPLEX SLOTS," giving top screening capacity.

Instantly Interchangeable: With any standard $\frac{3}{8}$ " Bronze plates either Drilled or Beveled edge.
Also available $\frac{3}{8}$ " thick for "T"-Bar installation.

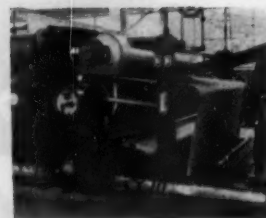


FITCHBURG Screen Plate Co., Inc.

301 South St., Fitchburg, Mass.

Back view showing
simple, rugged, two-
piece construction.

How To Get More Wear Out Of Your Felts



When you wash your felts in a specialized Oakite cleaning solution, starch, sizing, pitch and other soils do not re-settle in the felt nap. Instead, deposits are fully removed by the safe, effective detergency of the Oakite felt-washing compound. Then carried away in solution, thanks to superlative free-rinsing action. This means you get a cleaner, more absorbent felt that gives longer service—with fewer washings.

See your nearby Oakite Technical Service Representative for complete story. No obligation. Oakite Products Inc., 58C Rector Street, New York 6, N.Y.

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
TRADE MARK REG. U. S. PAT. OFF.
MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U. S. & Canada

CHEMIPULP PROCESS INC.

500 WOOLWORTH BUILDING

WATERTOWN, NEW YORK

CHEMICAL PULPING PROCESS

Hot Acid Cooking and Recovery Systems
Chemipulp—K-C Digester Circulating Systems
Chemipulp—K-C Improved Acid Plants
Digester Waste Liquor SO₂ Gas and Heat Recovery
Chip Pretreatment Preparatory to Cooking

Associated with

CHEMIPULP PROCESS LTD.

403 CRESCENT BUILDING

Pacific Coast Representative

A. H. Lundberg

308 Orpheum Building

Seattle 1, Wash.



Fabrication For Pulp & Paper Mills

Western Representative:

R. T. Barnes, Jr., 191 Kelton, San Carlos, Cal.

BROWN-HUTCHINSON IRON WORKS

1831 CLAY

DETROIT 11, MICHIGAN



proven
by
performance

The Sutherland Refiner complete
continuous Beating and Refining Systems.*

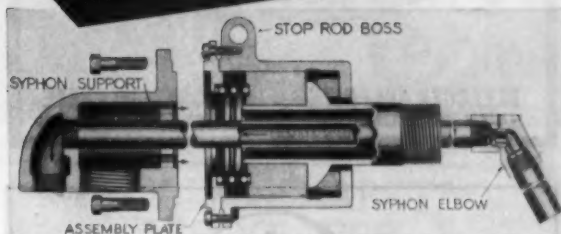


UTHERLAND REFINER CORPORATION

*U. S. Patent No. 2,654,295

TRENTON 8, NEW JERSEY

New Self-Supporting TYPE SDP JOHNSON JOINT with Syphon Elbow



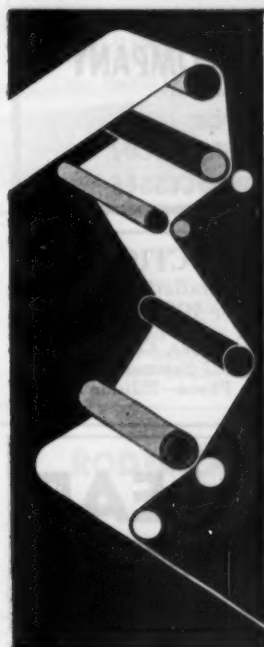
Here's a combination of new ideas that is getting a big welcome from the paper industry. It consists of the self-supporting Type S Johnson Joint — now with streamlined design for lighter weight, less cost and longer life of the wearing parts — with the addition of assembly plate and syphon elbow. Plate holds internal parts in position when head is removed to get at the syphon pipe. And syphon elbow permits use of straight pipe for syphon connections. Elbow seals tightly when in position, allows pipe to be inserted or withdrawn right through the joint body.

Write For Full Details



The Johnson Corporation

849 Wood St., Three Rivers, Mich.



you get
more use per dollar
with **MANHATTAN**
rubber covered rolls

Manhattan Rubber Covered Rolls last longer, reduce machine downtime for replacement, and give you "More Use per Dollar." Manhattan has developed an inseparable bond of rubber to metal core and a rubber covering that virtually eliminates troubles due to cracking, hardening or corrugating. You get density custom-tailored to your specific requirements... density that stays like new for long, steady production runs.

Talk it over with the R/M roll specialist.

RM-610-RC

Pacific Coast Representative:
DAN E. CHARLES AGENCY, 1331—3rd Ave., Seattle 1, Washington
Roll Covering Plants at Neenah, Wis.—Passaic, N.J.—N. Charleston, S.C.



RAYBESTOS-MANHATTAN, INC.

MANHATTAN RUBBER DIVISION, PASSAIC, NEW JERSEY

HAM FELTZ says:

"A rancher had a thousand sheep
with silken, fleecy pelts;
He sold the wool to Hamilton
Who made it into felts



"I wish I could make poetry as good as Hamilton makes felts. You should see how carefully they select the finest wool—how they remove all burrs—how thoroughly they wash them until they really are as white as snow.

"The carding takes out every kink and reduces the wool to a web no thicker than a spiderweb, before it is spun into yarn and woven into Hamilton Felts.

"No wonder manufacturers of paper and board prefer Hamilton Felts! Longer life at higher speeds—larger open spaces between threads to let water out without clogging—pre-shrunk to fit your machine without tearing down or break-in. And the thick nap that leaves no felt marks."

With more than 300 styles of Hamilton Felts from which to select, you can always get the particular weave that will do your work better, faster and at lower cost.

SHULER & BENNINGHOFFEN

HAMILTON, OHIO

MIAMI WOOLEN MILLS

Established 1858

Hamilton Felts



NORTH
(U. S. 51 North)
4040 Hiway 51 North
120 Rooms

EAST
(U. S. 7-64-79)
4941 Summer Ave.
120 Rooms

The South's Finest

SOUTH
(U. S. 51 South)
2300 S. Bellevue
76 Rooms

WEST
(U. S. 61 South)
980 S. Third St.
132 Rooms



MEMPHIS, Tennessee

SULPHITE MILL ACID PLANTS SEMICHEMICAL LIQUOR PLANTS

SULPHUR BURNING PLANTS
GAS COOLERS—SURFACE AND SPRAY TYPE
JENSSEN TWO TOWER ACID SYSTEMS
JENSSEN PRESSURE ACID SYSTEMS
JENSSEN AUXILIARY PROCESS TOWERS
RECOVERY PLANTS—COOKING ACID

SOLUBLE BASE ACID PLANTS
JENSSEN SO₂ ABSORPTION SYSTEMS
FOR BLEACH PLANT APPLICATION
SULPHUROUS ACID PREPARATION
COMPLETE DESIGN AND INSTALLATION

G. D. JENSSEN CO. INC.

WATERTOWN, NEW YORK

Western Representative:

James Brinkley Co., 417-8th Ave. So., Seattle, Wash.
FOUNDED 1915

EMBOSSING ROLLERS

Roehlen Engraving Works, Inc.

324 St. Paul St., ROCHESTER 5, N. Y.

IMPORTS OF ENGRAVED EMBOSSING ROLLERS
AND PLATES OF ANY TYPE AND DESCRIPTION
WORN ROLLERS RE-ENGRAVED
COMPLETE DESIGNING AND ENGINEERING SERVICE

MERRICK WEIGHTOMETER

Weights on Troughed or Flat Belt Conveyor
Level or Inclined

Write for Bulletin 375

MERRICK SCALE MFG. CO. 165 Summer St.
Passaic, N. J.
Irving R. Gard & Company, Lewman Building, Seattle 4, U. S. A.

WEYERHAEUSER



BLEACHED SULPHITE
KRAFT CONTAINER BOARD

BLEACHED SULPHATE
BLEACHED KRAFT PAPERBOARD

Dyestuff Makers



Since 1859

**GEIGY TECHNICAL SERVICE ON COLOR
PROBLEMS HAS BEEN OUTSTANDING
... TRY IT**

GEIGY DYESTUFFS

DIVISION OF GEIGY CHEMICAL CORPORATION
89-91 "ABCLAY STREET, NEW YORK 6, NEW YORK



dyestuff makers since 1859

REPRESENTATION IN THE U. S. A. AND CANADA: Appleton, Wis. • Boston • Charlotte, N. C. • Chicago • Los Angeles • New York • Philadelphia • Portland, Ore. • Providence, R. I. • Toronto, Canada
IN GREAT BRITAIN: The Geigy Co., Ltd., Manchester

PULP BLEACHING COMPANY

625 Alaska St., Seattle 4, Wash.

**EQUIPMENT FOR
CELLULOSE PURIFICATION
AND RELATED PROCESSES**

ELECTRICAL CONSTRUCTION CO.

Complete Electrical Installations
For Pulp and Paper Mills

Portland, Oregon
2147 N.W. Thurman St.
Phone—BR. 3511



Eureka, Calif.
522 Summer St.
Phone—Hillside 2-6590

USE BUNKER HILL LEAD

NORTHWEST LEAD COMPANY

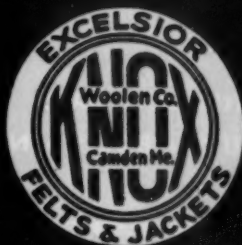
SEATTLE

SAN FRANCISCO

LOS ANGELES

Keep informed of news of the entire North American industry by subscribing NOW to PULP & PAPER. 1 year \$3.00, 2 years \$5.00, U. S., Canada, Mexico and other member nations of Pan-American Union. 1 Year \$4.00, 2 Years \$7.00 in other countries.
Fill in this coupon NOW and return to PULP & PAPER, 121 Second Street, San Francisco 5, Calif.

NAME
ADDRESS
CITY AND STATE



"EXCELSIOR" FELTS

The Trademark of Felts of Superior Quality
for Every Grade of Pulp and Paper

KNOX WOOLEN COMPANY

CAMDEN, MAINE

Pacific Coast Agents

DAN E. CHARLES AGENCY, 1331 Third Avenue, Seattle, Wash.

METCALF & HARSTAD ASSOCIATES CONSULTING ENGINEERS

Power Supply
Hydraulics
Insurance Building

SEATTLE 4

Water Works
Sewerage
SEnece 2525



C. M. GUEST & SONS Builders

GREENSBORO, N. C. ANDERSON, S. C.

Paper & Pulp Mills • Waste Disposal • Water Filtration
Steam Power Plants • Process Piping • Textile Mills
SERVING THE INDUSTRIAL SOUTH for MORE THAN FIFTY YEARS

J. E. SIRRINE CO.
Greenville, South Carolina

Engineers

PAPER & PULP MILLS • WASTE DISPOSAL • TEXTILE MILLS •
APPRAISALS • WATER PLANS • STEAM UTILIZATION •
STEAM POWER PLANTS • HYDRO-ELECTRIC • REPORTS

C. W. CUTLER CO. 1303 Third Ave. Seattle 1, Wash. CONSULTING POWER ENGINEERS

NEW POWER PLANTS • Oil, Coal or Process Fuels—
Extraction Topping and Ultra High Efficiency Types—
INCREASED CAPACITY and Efficiency for Old Plants

RODERICK O'DONOGHUE

CONSULTING ENGINEER

PULP MILLS—PAPER MILLS

IMPROVED PROCESSES — DESIGNS — REPORTS

420 Lexington Avenue

New York City 17

STEVENSON & RUBENS CONSULTING ENGINEERS

736 Olympic National Bldg.
MU 1244

Seattle 4, Wash.

LAYOUT AND
STRUCTURAL DESIGNING

BORIS R. RUBENS

JOHN H. STEVENSON

NORTHWEST FILTER CO.



122 Elliott Ave. West, Seattle, Wash., GARfield 7700

INDUSTRIAL WATER PURIFICATION PLANTS

Reopen'ing: Monterey Sand Company, Filter Sand

CHAS. T. MAIN, INC. CONSULTING ENGINEERS

Process Studies, Design, Specifications and Engineering Supervision

PULP AND PAPER MILLS

Steam Hydraulic and Electrical Engineering

Reports, Consultation and Valuations

80 Federal Street

Boston 10, Mass.

ALVIN H. JOHNSON & CO. INCORPORATED

Pulp and Paper Mill

Consulting and Designing Engineers
Serving the Pulp & Paper Industries Since 1929

415 Lexington Ave.

New York 17, N. Y.

W. H. RAMBO INDUSTRIAL PLANT ENGINEER

SPECIALIZING IN

DESIGN — ESTIMATES — SUPERVISION — CONSTRUCTION
PAPER MILL WOOD ROOMS, WOOD PRESERVATION, SAW
MILLS, WOODWORKING, HARDBOARD PLANTS and VENEER
PLANTS

Loyalty Building

BEacon 5102

Portland 4, Oregon

SANDWELL AND COMPANY

INCORPORATED

CONSULTING ENGINEERS

DESIGN, SUPERVISION AND REPORTS FOR PULP AND
PAPER AND RELATED FOREST PRODUCTS INDUSTRIES.

SEATTLE, WASHINGTON
VANCOUVER, BRITISH COLUMBIA



THE RUST ENGINEERING CO.

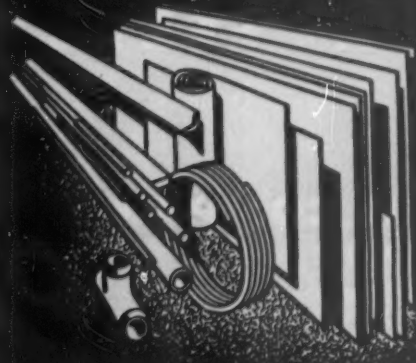
PITTSBURGH 19, PA. • BIRMINGHAM 3, ALA.

Offices in Principal U.S. and Canadian Cities

Engineers • Constructors

Complete Service for PULP and PAPER MILLS
including all auxiliaries and byproducts.

Surveys • Reports • Design • Construction • Modernization



COPPER · BRASS · BRONZE · STAINLESS STEEL

DISTRIBUTORS

SHEETS · PIPE · TUBING · BARS

FITTINGS · VALVES · NUTS · BOLTS · NAILS

ALASKAN COPPER & BRASS COMPANY
Stainless Steel

SEATTLE 4 3223 6th Ave. So., El 5800

PORTLAND 14 34 N. E. 7th Ave., Ea 6188



ADVERTISERS' INDEX

EQUIPMENT • MATERIALS • SERVICES
FOR AMERICA'S SIXTH LARGEST INDUSTRY

Alaskan Copper & Brass Co.	120	Hanchett Mfg. Co.	74	Roderick O'Donoghue	119
American Cyanamid Co. inside front cover		Hansel Engineering Co., Ltd.	114	Ohio Knife Co.	17
Anheuser-Busch, Inc.	12	Harrison Manufacturing Co.	89	Oliver Corp.	81
Appleton Woolen Mills	114	Hercules Powder Co.	101	Owen Bucket Co.	115
Atlas Mineral Products Co.	106	Herman Mfg. Co.	114		
		Holiday Inn Hotel	118	Pandia, Inc.	22
Babcock & Wilcox Co.	15	Hooker Electrochemical Co.	85	Parsons & Whittemore, Inc.	24
William L. Barrell Co.	14	F. C. Huyck & Sons	109	B. F. Perkins & Son, Inc.	34
Beloit Iron Works	51			Perkins-Goodwin Co. outside back cover	
Bird Machine Co.	49	Improved Machinery Inc.	25	Powell River Sales Co.	77
Black-Clawson Co., Divisions: Shar-		Ingersoll-Rand Co.	103	Puget Sound Pulp & Timber Co.	21
tle Bros. Machine Co.; Dilts Ma-		International Nickel Co.	20	Pulp Bleaching Co.	118
chine Works; Kohler System	2				
John W. Bolton & Sons, Inc.	19	Jacksonville Blow Pipe Co.	115	W. H. Rambo	119
Brown-Hutchinson Iron Works	116	C. D. Jensen Co., Inc.	118	Raybestos Manhattan, Inc.	117
Bulkley, Dunton Organization	69	Johns-Manville Corp.	41	Charles P. Raymond Service	111-12
Bulkley, Dunton Processes, Inc.	40	Johnsen, Jorgensen & Wettre, Ltd.	91	Reichhold Chemicals, Inc.	
		Johnson Corp.	117	inside back cover	
J. I. Case Co.	89	Alvin H. Johnson & Co.	119	Rice Barton Corp.	1
Chain Belt Co.	94-95	E. D. Jones & Sons Co.	9	Rochlen Engraving Works, Inc.	118
Chemipulp Process Inc.	116			J. O. Ross Engineering Corp.	73
Classified Advertising	111-12	Knox Woolen Co.	119	Rust Engineering Co.	119
Corn Products Sales Co.	97	Kohler System	2		
Crane Co.	39	Koppers Co., Inc.	93	Sandwell & Co.	119
Curlator Corp.	13			Sandy Hill Iron & Brass Works	32
C. W. Cutler Co.	119	Samuel M. Langston Co.	107	Saran Lined Pipe Co.	113
		Lindsay Wire Weaving Co.	30	Shartle Bros. Machine Co.	2
DeZurik Shower Co.	72	Link-Belt Co.	11	Shuler & Benninghofen	117
Dilts Machine Works	2	Link-Belt Speeder Corp.	79	Simonds Saw and Steel Co.	53
Dominion Engineering Co., Ltd.	38	Lyddon & Co., Inc.	24	J. E. Sirrine Co.	119
The Dorr Co.	61			Ray Smythe	112
Dow Chemical Co.	113	MacMillan & Bloedel Ltd.	113	Foster D. Snell, Inc.	16
Dracco Corp.	67	Chas. T. Main, Inc.	119	Soderhamn Machine Mfg. Co.	85
Drew Engineering Co.	111	Manhattan Rubber Division	117	Stebbins Engineering & Mfg. Co.	105
Dynumatic Div., Eaton Mfg. Co.	27	Mason-Neelan Regulator Co.	36-37	Stevenson & Rubens	119
		Mathieson Chemical Corp.	29	Stone & Webster Engineering Corp.	28
Eastwood-Nealley Corp.	18	Merrick Scale Mfg. Co.	118	Stowe-Woodward, Inc.	23
Electrical Construction Co.	118	Merritt-Chapman & Scott Corp.	70	Sumner Iron Works	83
Electro Dynamic Div., General Dy-		Metcalf & Harstad Assoc.	119	Sutherland Refiner Corp.	
namics Corp.	31	Midwest-Fulton Machine Co.	7	110, 112, 114, 116	
Emerson Mfg. Co.	19	Minneapolis-Honeywell Regulator		Swift & Co.	59
		Co.	42-43	Syntron Co.	75
Fitchburg Screen Plate Co.	116	D. J. Murray Mfg. Co.	82		
Foxboro Co.	8			C. T. Takahashi & Co.	115
Fuller Co.	99	Nash Engineering Co.	108	Thew Shovel Co.	76
		National Container Corp.	115	U. S. Rubber Co.	55
Geigy Chemical Corp.	118	Nopco Chemical Co.	5		
General Dynamics Corp., Electro		Northwest Copper Works, Inc.	26	Valley Iron Works	71
Dynamic Div.	31	Northwest Filter Co.	119	Warren Steam Pump Co., Inc.	104
General Dyestuff Corp.	33	Northwest Lead Co.	118	Weyerhaeuser Timber Co.	118
Griffith Rubber Mills	4			Williams Gray Co.	112
C. M. Guest & Sons	119	Oakite Products, Inc.	116	Yarnall-Waring Co.	57

**BECKAMINE
P-682-35**
Is a more effective
wet strength agent!

Reichhold BECKAMINE P-682-35 is a *superior* wet strength resin for application to bleached and unbleached kraft or sulfite, ground wood, rag, or mixtures of these pulps. It increases dry tensile and Mullen strength... aids in the retention of clay, rosin size, starch, and other beater additives. A urea-formaldehyde resin of the cationic type, it can be diluted infinitely with water with no precipitation. BECKAMINE P-682-35 is usually applied after the refining operation at any convenient point, such as fan pump or head-box. If necessary, it can also be added at the beater. For complete information, please write for Technical Bulletin P-2.

REICHOLD CHEMICALS, INC. 525 NORTH BROADWAY, WHITE PLAINS, N. Y.

REICHOLD



*Creative Chemistry ...
Your Partner
in Progress*



Synthetic Resins
Chemical Colors
Phenol
Glycerine
Phthalic Anhydride
Maleic Anhydride
Sodium Sulfate
Sodium Sulfite

PULP

Perkins-Guthrie Co.

Established 1846

CHICAGO, ILLINOIS

30 ROCKEFELLER PLAZA, NEW YORK

LUFKIN, TEXAS

STOCKHOLM, SWEDEN

PAPER